Croonian Lectures
ON
SOME APPLICATIONS OF PHYSICS TO MEDICINE.

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LECTURE II.—PART I.
ON TENSION IN CYSTS.

GENTLEMEN,—There is another class of actions which I wish to introduce to you to-day. It has struck me as being within the domain of physics, or at least partially so, and therefore I have given as the title of the present lecture, "The Tension of Cysts."

I believe that hydrostatic pressure, or rather fluid pressure generally, will be found ultimately to be a great physiological force. We know somewhat of this power in the curious processes of endosmose and diffusion. Indeed, the rise of a column of water in an endosmometer shows that this form of force can work to a great extent against gravity. It seems a step beyond the similar and partially unexplained power of capillarity. Capillarity as a purely physical force stands in a very doubtful position now; it has even been attributed to electricity; at any rate, we know that there is very little explanation of the function of capillarity. Go a stage beyond capillarity, and you get endosmose, and there you are on the borderland of pure and real physiology.

Now, we use capillarity, and think little of it in our every-day life. In the ordinary lamp-wick we employ the force, and hardly notice that against gravity the fluid is rising two, three, or four inches by some power, as yet only hypothetically understood, which is opposed to the gravitation of the earth. We know also as physiologists that pressure can very materially influence secretion. This, I believe, opens up a very large question. We have evidence that pressure can produce albuminuria, and, in some of these cases that I shall speak of, it has actually produced it—an albuminuria which has disappeared the moment the pressure has been removed by operative interference. And we have another pathological evidence of the great force which fluid pressure can exert in aneurism. I shall hope to take up this subject in the next lecture. Here I will only mention the rapid absorption which you see taking place in solid bone, in the stronger and stiffer tissues, by the comparatively soft walls of an aneurismal sac. The harder material in these cases gives way before the impact of a soft one. We ought to have some more precise mode of explaining this than those common phrases of "continued pressure producing absorption," and "intermittent pressure producing hypertrophy." What I can see my way to to-day is that the aneurism is distinctly, definitely the physiological correlative of the hydraulic press. This gives you a real, because pictorial, idea of the greatness of the force we are dealing with. Now, looking at an aneurism, we have the pumping force of the heart passing through a vessel which cannot be above seven-eighths of an inch in diameter, into a sac which corresponds to this large cistern. The larger the area of the sac the greater the hydrostatic power. The force, indeed, of a distending fluid on a sac increases with its enlargement, and it is increased in the ratio of the area of the vessel to that of the cavity. Superficial areas increase in the ratio of the square of the diameter—a quantity of two dimensions; whilst the pumping force is only increased arithmetically in one dimension; so we are constantly in every aneurism losing ground—we have exactly the converse of the problem to that in endosmose.

I do not wish to speak at length on the subject of aneurisms—merely to point out that an aneurism represents the hydrostatic press; but I wish to give you details of certain experiments that I have recently made with regard to fluid cystic tumours, and one or two practical deductions that I think may be fairly drawn from them.

Both in the hydrostatic press and in what has been called the hydrostatic paradox we rest upon the law of fluids transmitting pressures equally in all directions. It is so well stated in the excellent book of Dr. Haughton, himself a distinguished physiologist, that I may as well quote it:—"If a surface A of a liquid which completely fills a closed vessel of any shape be subjected to a certain pressure, this pressure will be transmitted equally and at right angles to every portion of the surface having an area equal to A." Here in the hydrostatic press we have a typical form of aneurism, and in the hydrostatic paradox I hope to show you we have a typical form of cystic tumour. You see that in the latter we employ the weight of the column, and *e converso* (this is the text of my lecture to-day) we may use the height of this column to measure the pressure. I have applied physical means to measure the pressure in ovarian cysts and in ascitic collections of fluid. I hope to extend it to abscesses, hydatid cysts, empyemata, hydrothorax, and possibly hydrocele. In this investigation I shall be obliged if any of my colleagues, when they have a large abscess or a case of empyema, hydrothorax, or hydrocele, will give me the opportunity of extending my observations, and allow me to make use of this simple apparatus.

I use the ordinary aspirator, filling the bottle with common water, plain or coloured, and I support it in a horizontal position, taking care to keep the level of fluid in the aspirator about the level of the fluid in the ovarian dropsy. I put a tube in connexion, which comes from the trocar. A graduated tube measures the tension in inches of water.

I will now refer to cases in which I have been able to make observations. I will take first the case of which I know the least. It came under the care of my colleague, Dr. Murchison, by whose kindness I am able to mention some facts about it.

A. A—— was admitted into Mary's ward, and was tapped eight or nine times. The tapping of which I estimated the pressure was the ninth; the quantity drawn off was sixteen pints seven ounces; the pressure of the fluid retained by the abdominal walls alone was only one inch; when she struggled with the first pain of tapping, it rose to seven inches, but when she had settled down after the operation, and was not in pain, when there was not the same involuntary action of the muscles, she could not by a powerful effort of inspiration raise the column above two inches.

The next case is that of Mary Ann H——, who was in the ward a long time. She had albuminuria, and considerable ascites, for which she was readmitted several times; she had an increase of albumen whenever there was tension. When the paracentesis was performed, the abdomen having been allowed to get as tense as was safe, fourteen pints thirteen ounces were drawn off, and the pressure rose to the highest I have ever seen it rise in ascites—namely, five inches.

The next case is that of an ovarian cyst; it was the case of S. C——, in Mary's ward, who was operated upon in a prompt way by Mr. MacCormac. When she came in I thought it was a case of ascites; it was brought in as such. It was a difficult case, in which a right conclusion could only be arrived at gradually, the reason of the difficulty being that she came in with an ovarian cyst so developed that it filled the whole abdomen. The tumour rose up sharply, and was not of the form that the fluid takes in the peritoneal cavity. When she was first tapped a large quantity of very fetid pus came away. Of course there was a possibility of it being purulent peritonitis. I had the good fortune to have the assistance of the great operator in these cases, Mr. Spencer Wells, who kindly came and looked at the case in the word; the diagnosis was hardly satisfactory. He thought it was most likely ovarian, but still it might be a case of suppurative peritonitis. It then came into my mind to try the pressure, as I had some facts as to the pressure in abdominal dropsy. At the second tapping I drew off seven pints eight ounces of fetid pus. But the pressure varied very much from my previous ascites cases. It was fourteen and a half inches, more than double. It turned out to be an ovarian cyst, and it was very ably removed. Unfortunately the patient did not recover. The pathognomonic sign was the powerful tension.

The other case that I have to mention is one in which there were two tappings. It is that of M. A. P——, who was in the hospital twice, and left on the second occasion on the 24th of December last. I ordered her to be tapped on

the 1st of October with a small trocar, when we drew off eleven pints fifteen ounces of glairy fluid. Here, of course, the character of the fluid assisted us very much. I had no doubt from the first that it was ovarian, and so it turned out; the pressure was fourteen inches, and with a deep inspiration she could raise it to sixteen inches. In December the second paracentesis took place, and we drew off fifteen pints of greenish-yellow fluid. The pressure with ordinary inspiration was from ten and a quarter to twelve and a half inches, and with a deep inspiration it rose to seventeen inches; during expiration, when of course the abdominal walls were retracted and the diaphragm drawn up, it was again, as in the other cases, fourteen inches. Now this case illustrates better than the other the fact that albuminuria may be produced simply by pressure. Before both tappings she had a certain amount of albuminuria, and afterwards there was no albumen in her urine.

These are the physical facts that I have to bring before you. In two or three cases of ovarian tumour I have found the pressure to average fourteen inches. In cases of abdominal dropsy it rises to seven inches, and that only with a strong effort; the general average is from one to five. Therefore it is pretty obvious that the pressure in ovarian cysts is double or threefold that in ascites; it is also obvious that both collections of fluid have, what perhaps it would be bold to assume, an active expanding or dilating power. This must be something similar to the action of endosmose—a distinct power of dilating by pouring contents into the sac, which requires further investigation, against the power of gravity and against the power of tension. In the case of Mary Ann H——, it forced every weak place in the abdomen before it. She had successively prolapsus of the uterus, of the umbilicus, of the rectum, and then double hernia. What can be more definite than the fact that the fluid was forcing every internal organ out of every door it could find? She went out better, but every orifice that could be guarded was guarded in order to counteract the tensional effect of the ascites within. This was with a pressure of at the utmost five or six or seven inches.

The ascites, however, has only the cavity of the peritoneum to hold it, and the tissues, muscular and other, external to the peritoneum. From this we seem to get these consequences:—The pressure less, because we know that in pregnancy, in solid tumours, in ovarian cysts, in multilocular tumours, the muscles separate and the tumour finds its way out; secondly, the tension very much dependent upon the strength of its wall. The effect of the diaphragm seems to make a great difference between the ascitic collection and the ovarian cyst. The latter has a proper wall of very great strength; it is competent to support a weight of seven inches of water. It is true that when it occupies the whole of the abdomen it pushes its way up until it becomes continuous with the diaphragm, and then the diaphragm re-exerts pressure upon it; but that cannot easily be a source of error. When the cyst is of moderate size it oscillates only slightly by respiration. Even when it fills the whole abdomen it does not seem to exercise the effect which abdominal dropsy has of forcing before it the various weak points in the abdominal parietes.

The last thing I have to do is to give you a numerical estimate of the pressure of ovarian cysts.

Taking the circumference of the cyst as 40 inches, its diameter will be nearly 13 inches. Now the surface of a sphere = $\pi \times (\text{diam.})^2 = 3{\cdot}14159 \times 169$. Adding log. π to log. 169, we get the log. of 530, which is therefore the surface of the cyst in inches.

Now the pressure of a column of 34 feet of water being 14·73 lb., a single foot = ·4332 lb., and fourteen inches = ·5054, or slightly over half a pound on the square inch; which, multiplied into the surface of the cyst, gives 265 lb. as the internal tension; 18 stone 13 lb.—more than double the weight of the patient herself.

What an enormous force is being exerted by the apparently tranquil and painless processes which are thus going on.

THE portrait of Mr. Prescott Hewett, Serjeant-Surgeon Extraordinary to Her Majesty, which has been painted by Mr. Ouless at the request of the many subscribers to the testimonial on his retirement from the office of surgeon to St. George's Hospital, is now finished, and it has been decided to present it to the governors of that institution at the weekly meeting of the board in October next, on the commencement of the medical session.

Clinical Lecture
ON
HÆMATINURIA.

Delivered at the Royal Infirmary, Glasgow,

BY MATTHEW CHARTERIS, M.D.,
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GENTLEMEN,—I desire to-day to draw your attention to a case of rare clinical interest—hæmatinuria,—and to give a digest of the history of this curious affection. Attention was first directed to it by Dr. George Harley in 1865, who published two cases in the Medico-Chirurgical Transactions of that year. Subsequent cases, amounting, it would appear, to twenty in all, have been recorded by Dickinson, Greenhow, Gull, and others. The history of these cases, though somewhat different in details, essentially tally in this:—The affection is paroxysmal in character, being ushered in by a sense of coldness or actual shivering, resembling somewhat the first stage of ague, and this is followed at a varying interval of thirty minutes to two hours by the passage of dark-coloured urine. After this has been voided, the general disturbance of the system, indicated by the coldness, the nausea, and aching feeling across the loins, ceases, and the patient experiences relief. The first urine passed is thick and dark; the after-micturition shows the dark colour to be less manifest, until, from a very fruity port-wine consistence, it becomes claret-like, and finally returns to the normal appearance of health. I show you here three different specimens of our patient's urine, which will bring clearly before your eyes what has been stated. Further, the history of the recorded cases evinces this, that the urine thus bloody in appearance contains albumen, while that of normal colour is free from it. Under the microscope the dark urine in the chocolate-coloured sediment which settles down after standing reveals amorphous granular matter, presumably broken-up blood-corpuscles, with, in most of the recorded cases, tube-casts of a dark granular character. Crystals of oxalate of lime seem to have been always observed; indeed, Dr. Greenhow, as a conclusion to six cases published by him in the *Edinburgh Medical Journal*, indicates that this peculiar feature allies the affection very closely to what Dr. Prout termed the oxalic-acid diathesis, in which a tendency to hæmorrhage forms one of the concomitants. The cases published, moreover, indicate in their origin a direct exposure to cold, though in the majority of instances fresh exposure is not essential to the production of the paroxysm. It is noteworthy that no paroxysms appear to occur at night, and that the morning urine is dark. The temperature during the paroxysm seems to have been recorded in these cases, and it appears to have been between 96·1° and 96·8°, and to have risen after the voiding of the urine to 98·6°, and in one of the instances reached 103·2°. That is the only instance recorded where it was distinctly febrile. Finally, Dr. Harley and Dr. Roberts both state that in two cases the quantity of urea was increased. The prognosis is favourable so far as death is concerned. No opportunity has as yet been afforded of observing the result on the kidneys of these remarkable phenomena.

With this brief *résumé* of the nature of hæmatinuria, permit me to bring before you, and to comment on as I do so, the leading features of the case in Ward 9. You will observe that the patient, a man aged thirty, has a sallow, unhealthy complexion, his countenance having a tendency to yellowness rather than paleness. He is thin, and he tells us that since the affection was noticed by him he has lost two stones in weight. His weight now is 10 st. Mark his history. By trade he is a ropemaker—a by no means unhealthy occupation, and his constitution has not been sapped by drink or disease. He has all his life resided in Glasgow, and this fact at once dismisses the idea entertained by some of ague being the exciting cause, for, damp though our climate is, it is far removed from fens and the ailments peculiar to marshy districts. He is slightly deaf, but tells

clearly and intelligently all he knows about what he terms the origin and cause "of his bloody urine." Twenty-two months ago, about mid-day of February 12th, 1877, he felt sick and squeamish, and had great coldness of his feet and hands. He did not actually shiver, but so ill was he that he had to leave off work, and return home, fortunately near. There he crouched over the fire for two hours, and finally passed "the bloody urine" for the first, but not for the last, time. Ever since then the least chill causes it to reappear, with the same symptoms as before; and this is most marked during winter when the weather is cold, though even in summer he is not quite free from it. He also states that previous to the paroxysm his tongue on the left side is numb, and his feet and hands feel as if they had been steeped in ice.

On Dec. 5th he went out at my request at 9.15 A.M., and returned at 10 o'clock. He was cold, and desired to sit by the fire, but it was thought advisable to place him in bed, with an extra supply of blankets, and a warming pan to his feet. His pulse was slow, only 54 to the minute. His temperature was ordered to be taken every half hour; it registered 98·5°, and continued to do so for the next three hours. After dinner, at 2 P.M., he said he had not been sufficiently exposed, and desired to go out again. He did so, walking about the courtyard until a full hour had elapsed. He now said he was thoroughly chilled, and that the paroxysm would recur. His temperature was taken, but, as before, it was not below the normal. At 4.30 o'clock he passed six ounces of bloody urine, having previously stated that he felt sick, and that his back was sore. Again, at 8 P.M., he passed four ounces, not quite so dark in appearance. At 2 A.M. his urine was clear, and at 8 A.M. it was the same, and has remained so for the last two days, simply because he has not been in any way exposed.

You observe here the three different specimens of urine, and I now show you the analysis undertaken with regard to them. I find No. 1 dark and bloody. I place in it the urinometer, and it registers 1030. I add nitric acid, and it coagulates. I apply the urea test, and it indicates the quantity per ounce to be 10 grains. Similarly proceeding with the second portion voided, I find the specific gravity to be 1028, and the quantity of urea to be 10·5 grains—a little more, you will observe, than what it was before. It also coagulates with heat and nitric acid. The pale urine, No. 3, has a specific gravity of 1012. It does not coagulate with heat or nitric acid. The urea is only half as much as it was in the other two specimens; in fact, it is normal urine, with the exception of the specific gravity being a little lower than what it ought to be. I place a portion of the grumous-looking deposit on the microscope slide. It shows no blood-discs, but granules, amorphous in character. More, it reveals no tube-casts. Blood is not, consequently, in the urine, but the colouring matter of blood—the hæmatin.

An important point has now to be spoken about—viz., the temperature. What result had these phenomena on it? This was taken very carefully, and with the following result, from the time he felt distinctly cold on returning from his walk:—At 4.15 P.M., 99·6° F.; at 5.15 P.M., 99·8°; at 6.30 P.M., 100·2°; at 7.30 P.M., 100·2°; at 9.15 P.M., 100·2°; at 10 P.M., 100°; at 11 P.M., 100°; at 2 A.M., 99°; at 8 A.M., 98°. You will observe it was distinctly febrile during the time the bloody urine was formed in the system, and you will also note the increase of urea in the urine then passed in comparison with the normal state. The same results were observed every day he went out, became chilled, and voided the dark urine. Thus, on Dec. 14th the clinical record states: "Patient went out at 8.50 A.M., and returned at 9.40 A.M., feeling cold and looking pale. At 12·15 he passed six ounces of coloured urine; sp. gr. 1025; quantity of urea per ounce, 9 grains. He slept till 3 P.M., and then passed eleven ounces of coloured urine, of the same specific gravity, but with a smaller quantity of urea per ounce. Both these specimens coagulated with heat and nitric acid. At 5 P.M. he passed eight ounces of pale urine, sp. gr. 1026; no change with heat and nitric acid; quantity of urea per ounce, 8 grs. At 9 P.M. he passed seven ounces of pale urine, of the same specific gravity and with a similar quantity of urea." His temperature at 8.50 A.M. was 97·8 F.; at 9.40 it was 96·2°; at 12.15 P.M., 102°; at 2.30, 100°; at 3, 100°; and at 9, 99·4°.

On Dec. 22nd I resolved to try the injection of pilocarpine, with the view of relieving the kidneys by acting on the skin; and the result was not satisfactory so far as it did not prevent the formation of the urine in question. Thus the record says the patient went out at 2.30 P.M. and returned at 3.45. His temperature before he went out was 96·6°. After he came in it was 96°; at 4.45 P.M. it was 98·8°; at 5.45 P.M. it was 100·2°. One-third of a grain of pilocarpine was injected at 5.55, and had the following effect: in fifteen minutes he commenced to perspire, his skin feeling quite moist; in twenty minutes he was bathed in perspiration, and was constantly spitting (he continued to perspire for twenty minutes); in half an hour his temperature was 100·2°, his pulse 106; in forty minutes his pulse was 96, and his skin was not so moist as previously. At 7.30 eight ounces of coloured urine was passed, his temperature then being 99·2°. Again at 10.30 he passed nine ounces of coloured urine, his temperature now being 98·4°. His after-micturitions were clear.

On Jan. 11th I resolved to try the injection of pilocarpine immediately on the patient returning from his walk, and before any increase of temperature or actual coldness had been noted. The result was that the temperature did not rise above 99·4°, but the coloured urine was voided as before, and gave the same reactions. The patient, however, stated that he was not so exhausted on the following day, and that he had had an easier time of it than on any previous occasion.

The treatment adopted was at first quinine and iron, and this was subsequently followed by ergot and nux vomica. During his stay in hospital he gained in weight and seemed more cheerful, and at last he went out voluntarily to resume his occupation. When he remained in the ward his urine was always natural, and it was only when, either by his own desire or my request, he walked in the courtyard that the phenomena recorded were observed.

On February 2nd the patient left the hospital for ten days, and returned of his own accord. He was more emaciated than on his previous admission, and, owing to the cold weather and exposure at his work, he had scarcely ever been free from "the bloody water." Since his re-admission he has been placed in a side room, with a fire in it, and has been ordered quinine thrice daily in six-grain doses. There has been no return of the hæmatinuria to this date (Feb. 21st).

P.S.—The patient has continued steadily at his work during the summer months, and, so far as I am aware, without any recurrence of his complaint.

THE ANTISEPTIC METHOD IN RELATION TO DRAINAGE OF THE PERITONEUM IN ABDOMINAL SURGERY.

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IN May of this year I read a paper with the above title before the Harveian Society of London, and I now propose to reproduce the main facts, omitting some of the details of the illustrative cases and adding fresh facts observed during the last three months. I shall almost entirely confine myself to the operation of ovariotomy, because it is the most common of the peritoneal operations which raise the question of drainage. All I say about ovariotomy applies, however, with equal force to any operation in which the peritoneal cavity is opened.

When antiseptic ovariotomy first became an established operation, and its successes cleared away the fear that the carbolic acid on the hands, instruments, and sponges, and the cold vapour of the spray would be as great or greater dangers than those which we hoped to avoid, I felt sure that the operation performed antiseptically would afford a convincing answer to those who affirm that careful drainage is as important a factor in the results of antiseptic surgery as antiseptics themselves. I have always believed that the fluid pent up in wounds would not be a source of danger provided it was aseptic, and did not cause by its quantity such distension of the cavity containing it as to irritate the nerves in the flaps or coverings of the wound, either directly by stretching the flaps themselves, or indirectly by tightening the sutures. I say I have always believed this, but

I think I owe the original idea to the teaching of Mr. Lister in my student days. In the peritoneal cavity, especially when its anterior wall has been stretched by the presence of a large tumour, we have such space that almost any amount of fluid may accumulate without causing distension or tension of the sutures. Theoretically, then, it seemed to me that if our antiseptic method had been so perfect that we were certain of all being aseptic in the cavity when the external wound was closed and dressed, we had nothing to fear from the blood, serum, or other fluids which might remain even after carefully cleansing the peritoneum, or might be poured out during the first few hours after the operation, as the result of the irritation caused by the handling, sponging, and carbolic acid.

In any ordinary surgical wound, from which the element of tension is excluded, asepticity and rest being maintained, I do not believe that a moderate accumulation of serum or of mixed serum and blood will cause fever; and this mixed fluid will be gradually absorbed, unless the special constitutional condition of the patient is such that any disturbance of the normal nutrition of the part tends to cause effusion of fluid instead of its absorption. But in ordinary wounds space for effused fluid is small, and tension is easily produced, with its attendants, nerve irritation and free effusion of serum or pus; hence the *advisability* of providing free drainage in all cases. The *necessity* cannot be affirmed, because in many cases little or nothing flows through the tube or tubes from the first. We cannot, however, say before closing the wound whether we shall have much or little effusion, though the general condition of the patient and the behaviour of the tissues during the operation may enable us to form a shrewd guess. Now in the peritoneum we can afford to dismiss fear of tension, but, in spite of perfect asepticity and rest, we are still liable to fever after ovariotomy. Before proceeding to discuss the etiology of this fever and its possible varieties, we must remember that in peritoneal surgery we have the contact of the accumulating serum, or mixed serum and blood, with fresh peritoneal surfaces, and the possibility that this may cause peritonitis and its attendant fever. Experience in ovariotomy shows this to be a rare complication, and I think it may be classed with the rare constitutional states which may in ordinary surgery give aseptic suppuration without any apparent exciting cause. Of course, I am speaking only of simple peritonitis in aseptic cases, and not of septic peritonitis. Leaving peritonitis out of the question, then, for the present, we still have fever and even high fever (hyperpyrexia) following aseptic ovariotomy. Billroth attributes this simple fever in surgical cases to the reabsorption of the effused blood and serum, and I think I have observed cases in which this is the most likely explanation of the presence of fever, and high fever, after ovariotomy. I believe, however, that by far the commonest cause is the excess of blood circulating in the system when a large vascular tumour has been removed with but little blood in it, and with but little loss of blood during its removal. I ventured to call attention to this fever and its treatment in a paper read before the Medical and Chirurgical Society, and published in the Transactions for 1877.[1]

It is exceedingly difficult to diagnose correctly these different forms of fever following extensive peritoneal operations, but with care and experience it is not only possible, but absolutely necessary to success; for each requires its own special treatment, and what is good for one is bad for another. It is only when we can exclude sepsis that we can begin the study of this important branch of the after-treatment; when putrefaction was so frequently present in greater or less degree, there was always a certain amount of fever, due to the absorption of the poisons generated, and this led to so much doubt, and made the symptoms so much alike in different cases, that any attempt at accurate diagnosis was hopeless. Before proceeding to discuss the question of drainage in connexion with antiseptic peritoneal surgery, I must glance at what had been written on the matter before the days of antiseptic ovariotomy, and relate briefly my own experience during the same period.

It is unnecessary, I hope, at the present time, to do more than mention the old plan of leaving the pedicle ligatures long enough to hang out of the wound. The records of the cases thus treated show that the ligatures far more often served as moist channels for the entrance of the causes of putrefaction into the deepest recesses of the peritoneum than as an effectual channel of escape for the products of their presence. Dr. Marion Sims' proposal[2] to drain in every case through the pouch of Douglas was a much more rational one; but it was too heroic, and had obvious disadvantages, not the least being the fact that no tube through the pouch into the vagina can thoroughly drain the bottom of the pouch when the patient lies on her back. To get perfect evacuation of the pouch of Douglas, it is necessary to puncture through the rectum, as pointed out and at one time successfully practised by Dr. Keith, of Edinburgh, in cases in which a putrid collection had formed after ovariotomy.[3] Dr. Sims no longer advocates his own plan, the introduction of antiseptics having changed his views, as he himself tells me. He now gives in his adhesion to the admirable method first introduced by Kœberlé, brought to perfection by Keith, and now almost universally employed in cases in which drainage is considered necessary. I refer to the plan so clearly and concisely described by Mr. Spencer Wells in a paper read before the Medico-Chirurgical Society in 1877, and published in the Transactions.[4] A glass tube, long enough to reach from the lower angle of the abdominal wound to the bottom of the pouch of Douglas, is fixed in position when the wound is closed, its mouth opening outside the incision, covered with a carbolised sponge placed under whatever dressing is used. This tube is emptied at intervals (every six or eight hours in non-antiseptic cases) by means of a smaller india-rubber tube attached to an ordinary glass syringe, the same tube and syringe being available for the washing out of the pelvis with antiseptic fluids if necessary.

At the Manchester meeting of the British Medical Association, my colleague, Dr. Bantock, read a paper "On Drainage in Ovariotomy," but, as it is merely a record of five successful cases and one unsuccessful case, and contains nothing that Mr. Spencer Wells had not already told us in the paper previously referred to, it need not detain us.

In the days before antiseptics it was a well-known fact that very simple cases of ovariotomy often died from septicæmia or septic peritonitis, whilst very complicated ones got well with no bad symptoms. This can only be explained by supposing that something gained access to the peritoneum in the one case which did not in the other, or that the peritoneum in the former case, though apparently healthy and uninjured, was not in such a good condition for resisting the formation of poisonous material. Some peritoneums are much more inclined to pour out serum than others. This one constantly sees during operations, and if there is this tendency the more one sponges and irritates the more the serum flows, a fact which some operators seem remarkably slow in learning. In a healthy peritoneum, as in healthy wounds, the normal condition of the tissues is inimical to the life and multiplication of the causes of putrefaction, and so long as the fluid is only in such a thin layer that it is spread between peritoneal surfaces and exposed to the healthy vital action, putrefaction either does not occur at all, or if it does its products are so rapidly absorbed that the patient merely suffers from mild septic fever. I state this natural power of the healthy tissues as a fact, because I do not see that we can in any other way explain the number of cases that recovered, often without any bad symptoms, before the days of antiseptics, cases in which the wounds, whether peritoneal or of other parts, must have received during the operation any quantity of infective material. Whilst the tissues of some patients evidently possess this healthy vital power in a marked degree, others seem to have lost it altogether. I have seen a patient die within twelve hours of operation, with a temperature of 109° F. to 110° F., the body almost putrefying before life was extinct, and directly after passing into a most horrible condition. Though the operation was a severe one, and not performed antiseptically, the surroundings and general condition appeared favourable, and while fully believing that different causes of putrefaction will produce different results, I think such cases must make us also admit difference in the power of resistance, or, in other words, greater fertility of the soil.

But if at any point a collection of fluid takes place, as, for instance, at the bottom of the pouch of Douglas, the

[1] Twenty-five Cases of Ovariotomy, with some Remarks on the Causes and Treatment of the Fever so frequently following the Operation.—Med. Chir. Trans., vol. lx.

[2] New York Medical Journal, Dec. 1872, and April, 1873.

[3] Remarks on a Case of Intestinal Obstruction following Ovariotomy, Brit. Med. Jour., Dec. 1873.

[4] Three Hundred additional Cases of Ovariotomy, with remarks on Drainage of the Peritoneum.—Trans. of Med.-Chir. Soc., vol. lx.

tissues can no longer act upon it all, and if any of the causes of putrefaction are present, the collection putrefies, and when once there is an enclosed collection of putrid bloody serum, we get rapid poisoning with fever; the collection is kept at a high temperature and in the very best condition for the increase of the causes of putrefaction. Wherever the putrid fluid is in contact with the peritoneum, it irritates that sensitive membrane, fresh fluid is poured out, and there is thus a constantly increasing supply of liquid poison, which is constantly irritating fresh surfaces, and we have rapidly-spreading septic peritonitis along with the general condition known as septicæmia. If the patient is strong enough to resist the poison, and the latter is rapidly absorbed, she may recover, after being in great danger; or if adhesive inflammation is caused and the fluid is not too rapidly poured out, we may get an encysted putrid collection which may be evacuated by the surgeon with a successful result; or a putrid abscess may form and be its own surgeon, finding its way out at the wound or into the vagina, rectum, or bladder. Such are briefly the terminations of cases in which fluid, left in the peritoneum or poured out after the wound is closed, putrefies; and such are the reasons why drainage was so necessary and often so useful, when we could not exclude sepsis. Practical experience must lead to the belief that there are different kinds of sepsis and different degrees of poisoning, according to the kind. At least, such is my conviction after a very large experience in peritoneal surgery. All the more important experimental observations on the causes of putrefaction seem to me to harmonise with this experience.

In all this question of drainage there is one fact which is the key-note, and in the paper already alluded to Mr. Spencer Wells struck it when, after stating how the first necessity for drainage may arise, he said, "further secretion would be excited." If the poison-generator, whatever it be, was admitted, and did its work in the fluid it found, I think it would *rarely* prove deadly. It is the fact that it makes this fluid obnoxious to the tissues so that they pour out more fluid to wash themselves; if there is free escape, nature is generally equal to her task; but if the fluid is pent up, the very effort she makes to wash the tissues multiplies the food for the poison, and the quantity of the poison, and the danger in proportion. Hence the necessity for drainage. Now, if rigid Listerism will enable us with certainty to exclude the poison, or rather exclude what leads to its formation, can we not, in the special class of cases under consideration, dispense with drainage? Before this question can be definitely answered, we must know a little more about the fever-inducing power of mixtures of serum and blood, and as to their power of inducing peritonitis. I have already said that I believe the reabsorption of these fluids does in certain cases cause fever, and high fever which may become absolutely dangerous, but may be recognised and differentiated from septic fever, and is certainly curable by appropriate treatment. In order to settle this question we must have the records of many observers when attention to the subject has once been fully aroused. The drainage-tube, then, aids the vital action by allowing healthy tissues to remain in contact, and thus limiting the irritated area, while it aids the washing process by constantly allowing overflow. Nature rapidly pours out fresh fluid, and weakens the poison formed; the tube conveys this out of the body before there is time for the fresh fluid to become itself poisonous, or for any serious reabsorption to occur.

In my first thirty-eight ovariotomies, which were performed without antiseptics, I drained with the glass tube in thirteen cases. Five of these died, and as I have already given full details of them in a paper read before the Harveian Society,[3] I need not further refer to them, except to say that I am inclined to think that the very free serous discharge, which occurred in one case, hastened death by exhaustion, and the post-mortem showed how much the tube had irritated; it was walled in by a complete mass of intestines, closely adherent with firm yellow lymph. The end also had caused some redness and abrasion where it rested. This in a short period of thirty-seven hours, during which the patient lived.

In another case I feel sure the tube was a cause of putrefaction, and was worse than useless. In a case not treated antiseptically I believe it is never *safe* to withdraw the glass tube without replacing it by an india-rubber tube, which can be shortened day by day. I have gone carefully through the records of the thirty-eight cases, and can only find one in which I think it just possible that a fatal result might have been avoided had I put in a tube. In one other, where I did not drain at first, the patient, after doing well for some days, became very feverish, and eventually some red fluid escaped from the lower angle of the wound, and I inserted an india-rubber tube, which was in for nearly three weeks. She certainly improved after the tube allowed free and regular discharge. Among the cases are many in which I hesitated whether to use a tube or not, and in which, had I drained, I should very likely have attributed to the drainage more than its due share in the recovery.

The following are the disadvantages in drainage:—

1. The difficulty in deciding when a tube is necessary.

2. The tube, if not necessary, is decidedly a source of danger; it keeps open a possible track for the entry of the causes of putrefaction, it lengthens the time during which the wound is unhealed, and it may cause obstruction of intestine or chronic peritonitis. I know of at least one case published as a successful case of drainage in which the patient died a few months after of obstructed intestine.

3. It retards convalescence. I find that the average stay in hospital after operation of seventy cases, in which I did *not* drain, was twenty-two days. This includes some of my early cases in which I used the clamp, and it always retarded the complete closure of the wound as much or more than the tube does. The average in thirteen drainage cases, on the other hand, was thirty-three days, and some of these cases left with a granulating sore where the tube had been. Another disadvantage which the tube shares with the clamp is, that it leaves a weak place in the incision, through which hernia is apt to occur, and at which a fungating protrusion may appear if there has been any malignant element in the case. I have one such case now in the cancer wards of Middlesex Hospital. Of course if no tube had been used, and this recurrence had been intra-peritoneal, the patient would have suffered far less than with an external fungating mass, offensive and painful both to herself and others.

In the eight cases treated by drainage before antiseptics the glass tubes remained in for periods of 83, 90, 92, 77, 240, 96, 148, and 172 hours; the india-rubber tubes which replaced the glass, 75, 150, 196, 95, 120, 336 hours, and some days respectively.

(To be concluded.)

[3] Unsuccessful Ovariotomy, with Cases.—Med. Times and Gaz., June and July, 1878.

ACUTE POISONING BY PHOSPHORUS.

By SIDNEY COUPLAND, M.D.,

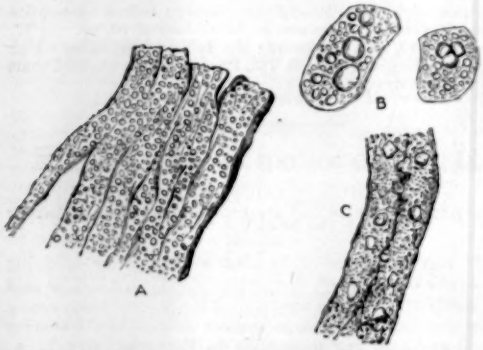
ASSISTANT-PHYSICIAN TO, AND LECTURER ON PATHOLOGICAL ANATOMY AT, THE MIDDLESEX HOSPITAL.

IT may be interesting to place on record the following facts of a case of acute phosphorus-poisoning, which is said to rarely occur in this country. This is surprising, seeing how abundant are the opportunities afforded to children for accidentally killing themselves in this way. Mr. E. A. Fardon, the resident medical officer at the Middlesex Hospital, has kindly supplied me with the following notes of the case.

Ellen G——, a well-nourished, healthy child, one year and two months old, had been perfectly well up to Tuesday, April 29th, 1879. About ten o'clock on the morning of that day her mother had occasion to leave this child and her twin sister alone in a room where a box of lucifer matches (of the ordinary ruby-red-headed kind) was lying on the table. During her absence the child's curiosity prompted her to open the box, and to suck the heads of the matches, giving some of them, after she had sucked them, to her sister. When the mother returned she found the match-box open, and its contents scattered about the room. She noticed that several of them (how many she could not say) wanted their heads and were wet, and she correctly guessed how the children had been passing their time. She fancied the breath of each of them smelt of phosphorus, and noticed that Ellen's tongue was blistered. That day this child vomited her dinner, and appeared very sick and poorly,

refusing food; she was also freely purged. The mother did not seek for medical advice, ignorant of the gravity of the accident, and she felt confirmed in her idea that not much harm was done by the fact that next day the child seemed quite well—so well, indeed, that on the evening of the 30th she took her children out for a walk, and on coming home they enjoyed their supper, and went to bed apparently in good health. In the night, however, about 1 A.M. on May 1st, the child Ellen awoke and cried out for some milk, saying that she was very thirsty. The mother gave her the milk, and told her to go to sleep, but waking up herself three hours later she found the child in a fit, and at once brought her to the hospital. A warm bath was given the child, but at six o'clock in the morning she died, forty-four hours after taking the poison. It should be added that the other child also was attacked with vomiting and diarrhœa about the same time as her sister, and recovered like her; but the mother was enjoined to bring it to the hospital, and it was admitted. Happily no further symptoms were developed in this case, although, when first seen, the heart was acting very feebly.

The post-mortem examination on the fatal case was made on May 2nd. The body was that of a well-nourished, fully-grown child. There was not a trace of jaundice, nor were there any cutaneous petechiæ. The brain and its membranes were very vascular, but showed no other gross change. In the thorax there were no subserous ecchymoses. The lungs were engorged with blood. The right side of the heart was distended with soft black clot and fluid blood. The walls of the ventricles, especially of the left, appeared notably altered, presenting on section a yellowish granular appearance, whilst the consistency of the muscular substance was extremely soft and friable. The microscope revealed a degree of fatty degeneration which, for its extent and intensity, is more than I have ever noticed. All the fibres examined from the wall of the left ventricle and from its papillary muscles were filled with oil-globules of all sizes, so that no striation could be observed in them (Fig. A) at all. The whole of the alimentary canal was carefully examined. There was no excoriation on the tongue or buccal mucous membrane. The "blister" which the mother had noticed two days before could not be seen. The mucous membrane of the pharynx and œsophagus was perfectly natural. The stomach was nearly empty of contents, a few masses of curdled milk and a little mucus lying in the much contracted viscus. Its lining membrane showed no signs of inflammation. The small intestines contained a scanty amount of yellowish fæcal matter. Peyer's glands were mostly swollen and vascular, the solitary follicles were prominent, and the mesenteric lymphatic glands pinkish and swollen. In the large intestine the solitary follicles were prominent, appearing as pellucid grains. A few ecchymoses, of the size of a pin's head, were scattered here and there beneath the mucous membrane of the colon; but there was no ulceration or erosion of the membrane. The contents of the large bowel had a natural appearance. The liver was of normal size; its capsule smooth, but its surface was curiously mottled by a few irregular and ill-defined yellowish patches, contrasting with the predominant pinkish tint due to increased vascularity. Similar yellowish areas, which differed from the surrounding hepatic tissue in containing hardly any blood, were visible on the surfaces of section. The outlines of the lobules were well marked, although close inspection showed them to be obviously swollen. But the organ was of fair consistence; it was certainly not softened or friable. A scraping of the surface showed under the microscope, however, an advanced degree of fatty change in the hepatic cells (Fig. B), and this in all parts of the organ, the paler portions as well as the more vascular. The cells were stuffed with oil-globules, some large enough to fill the whole cell, all very definite and highly refractile. The spleen was firm, and natural to the naked eye. Both kidneys were very vascular; the stellate veins on their surface were very marked. The surface was smooth, the cortex mottled and yellowish; it appeared swollen. Microscopically the secreting tubules showed a tolerably uniform distribution of epithelial change. The secreting cells in many of the tubules were extremely swollen and granular, so that they completely filled the lumen of the tube; whereas in others the cells were partially filled with oil-globules (Fig. C), and all stages were seen, from simple cloudy swelling to an extreme degree of fatty transformation. There was no urine in the bladder.



A. Bundle of muscular fibres from the wall of the left ventricle. No striation is visible, all the fibres being pervaded with fatty globules.
B. Two liver-cells, highly charged with fat.
C. Renal tubule from the cortex, showing granular swelling and fatty change of its epithelial lining.

(From preparations made and examined in the fresh state.)

Portions of the viscera were treated with a mineral acid in a dark room, but no phosphorescence could be obtained. They were also chemically examined by Mr. Foster, but with negative results.

The case is so far imperfect that I am unable to say how much phosphorus was actually swallowed by the child. The minimum fatal dose is said to be less than one grain, and certainly it is highly probable that this amount was considerably exceeded in this case. It must be remembered, too, that this child was not two years old—a fact which further serves to explain the remarkable rapidity with which the remote toxic effects were produced. In a paper on the subject published in the fiftieth volume of the "Medico-Chirurgical Transactions" Dr. Habershon gives an abstract of the statements of Tardieu upon the varieties of acute poisoning by phosphorus, where it is noted that death occurs more rapidly in very young children than with adults—viz., in four or six hours to one or two days; and the "symptoms of poisoning are reduced to severe attacks of vomiting followed by somnolence and convulsions." In the same volume, Dr. Hillier records the case of a child, aged four and a half years, who was poisoned by sucking some two dozen lucifer matches, whose death did not take place till the sixth day after taking the poison. As in the present case, it was ushered in with convulsions.

One feature in our case, and a characteristic one of this form of poisoning, was the immunity from all symptoms enjoyed for twenty-four hours, between the immediate irritant effects on the gastro-intestinal tract and the remote effects on the nervous system, probably from the blood changes due to the hepatic and renal disease. This accords with the course of things usually observed, and the more or less prolonged interval of comparative or even absolute health lulls both the victim and his friends into a false security. It is a point which should always be borne in mind. Often, as in the present case, the vomiting and diarrhœa have not been urgent enough to call for medical aid, and this is not summoned until the sudden supervention of convulsions comes to terminate the case. In the present case, the whole cycle of events, gastro-intestinal irritation, interval of freedom from symptoms, and the nervous phenomena, was comprised in the short space of forty-four hours. Probably this is one of the shortest cases on record, for in cases where death occurs in half-an-hour (Tungel), or in four to six hours, it is most likely that it is due to the material acting as an irritant poison. In this respect one might compare poisoning by oxalic acid with that by phosphorus.

Another interesting feature in this case associated with its brief duration is the absence of jaundice. It is well known how commonly this is produced in phosphorus-poisoning, so commonly that it is rightly regarded as one of its most prominent symptoms, and its mode of production has been the source of much debate. In their exhaustive monograph on this subject, Munk and Leyden[1] aver that it is

[1] Die Acute Phosphor-vergiftung, von Dr. Ph. Munk and E. Leyden. Berlin, 1865.

rarely absent in fatal cases; although in those cases which terminate favourably it is frequently absent. But they mention a case recorded by Tungel, in which death took place in nine hours, where it was absent; and another, fatal on the fourth day, recorded by Fritz, where after death the body had an icteric tint not observed during life. As a rule, they find that it does not generally appear before the *third day* after taking the poison. This statement would accord, then, with its absence in our case, where death took place on the third day, and would also go far to explain the absence of jaundice in a case recorded by Dr. Stevenson in Guy's Hospital Reports for 1877 (for reference to which I am indebted to Mr. Tyson), where death took place in fifty-nine hours. In the same paper is a case communicated by Mr. Tyson, where "slight yellowness of the conjunctivæ" is noted on the fourth day, the icterus becoming marked before death, which took place on the eighth day. In Dr. Habershon's case (*loc. cit.*) jaundice appeared on the fifth day, in Dr. Hillier's on the fourth day. It is curious that, with such knowledge, Munk and Leyden should aver their belief in the mechanical origin of the jaundice from blocking up of the duct by inflammation of the duodenum—a view which Virchow was the first to advocate. For so much delay in the appearance of the jaundice, delayed frequently until after the subsidence of symptoms of gastric irritation, surely favours the alternative hypothesis of its being a "hæmatogenous icterus" dependent on the acute fatty "degeneration" of the liver. The question is dealt with by Dr. Murchison in his Clinical Lectures on Diseases of the Liver, and he draws the comparison between the jaundice of phosphorus-poisoning and that of acute yellow atrophy.

In the present case, too, it may be observed that there was still obvious indication of enteritis. The prominence and vascularity of Peyer's glands and the solitary follicles were so striking as to call forth the remark that the ileum might readily be thought to be that from a case in the early stage of enteric fever.

The most remarkable fact of all presented by phosphorus-poisoning is the widespread parenchymatous degeneration of organs to which it leads. Possibly, in children, such changes of denutrition (if one may so phrase it) take place more rapidly than in adults; for assuming this child to have been quite healthy when she took the poison, at the end of forty-four hours she presented an intense degree of fatty change in the heart and liver, and an advancing change of similar kind in the kidneys. It is to be regretted that other tissues and organs were not examined microscopically, so that we might have learnt how far the rest of the body shared in this change. It is in the occurrence of this change that the anatomical evidence of poisoning by phosphorus lies, for in more or less degree such "steatosis" is never absent, and it is of the highest importance from a medico-legal point of view to recognise the fact of the extreme rapidity with which changes such as these may be set up. So accustomed are we to regard "fatty degeneration" as a chronic process, that so widespread a change as was here presented, of only a few hours' duration, is a striking and valuable fact. Nor is it an isolated instance, for in the paper referred to Dr. Stevenson gives the case of a child, five years of age, who died fifty-nine hours after taking the poison, and in whom fatty changes were quite as marked as here. Experiment has also shown that these changes can be rapidly induced (Munk and Leyden), and we have no ground for believing it to be impossible, however difficult it may be, to afford a satisfactory explanation of the process. I have no intention, nor have I the ability, to enter into the question as to the manner in which phosphorus produces these effects. It may be that the phosphorus, minute in quantity as it is, passes into the blood unoxidised, and that its powerful affinity for oxygen leads to these fatty changes from causes akin to those operating in anæmia. It may be that the substance is converted into phosphoric acid or other oxygen compounds, which then act on the blood to the same end. For such and similar speculations, and for much experimental detail in illustration of them, Munk and Leyden's work must be referred to. But what concerns me here, and what I wish to emphasise, is the fact of the rapidity with which the parenchymatous degenerations (possibly inflammatory?) may be set up by this poison; the fact that the organs (the liver and kidneys especially) so affected may not be observed by the naked eye to be notably altered, owing to vascular injection masking the parenchymatous changes, nor may their consistence be obviously diminished; the fact that jaundice may be absent when death takes place on or before the third day; and, lastly, the fact that there generally occurs an interval of freedom from symptoms, in fatal cases, between the immediate irritant action of the poison and its remote effects.

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THE HYPOPHOSPHITES IN PHTHISIS.

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IT has been remarked, with much truth, that there is nothing more difficult in medicine than to determine the actual value of a given drug in a certain disease. If this be true in the case of the so-called specific diseases—in which there is evidence of the existence and operation of a particular poison or *materies morbi*, causing the regular evolution of a related series of morbid phenomena,—how much more difficult the task becomes when we have to deal with an affection running no determinate course, such as phthisis, where there are certain destructive changes going on in the lungs, varying remarkably in form, progress, and effects, and resulting from the operation of essentially different causes, both predisposing and exciting. Hence it is, no doubt, that in phthisical, as in so many other affections, the pathology of the disease is still so far in advance of its therapeutics. While the former is being steadily built up, by an ever-accumulating array of carefully established facts, the latter is still held in the bonds of empiricism or struggling in the throes of experiment. There are few diseases in which such a varied host of remedies has been recommended, or indeed employed from time to time, and in which has so often been claimed the discovery of something like a *specific*, all-powerful to arrest the progress and heal the ravages of this terrible scourge. Many of these vaunted remedies have not, in the beginning, met with the attention they perhaps deserved, and others again may have subsequently fallen into unmerited disrepute. But this has largely resulted from the extravagant laudation of their too enthusiastic advocates, leading to an expectation of therapeutic potency which experience has failed to realise. In many instances also, along with this intemperate praise of a remedy, there has been advanced an equally strained pathological theory to explain its *modus operandi*.

These observations naturally suggest themselves in connexion with the use of the hypophosphites in the treatment of consumption, now extending over a period of more than twenty years. Dr. John F. Churchill first urged the employment of the alkaline hypophosphites in the prevention and cure of phthisis in 1857. In his paper on the "Proximate Cause and Specific Remedy of Tuberculosis," he regards the decrease in the system of the phosphorus it contains in an oxygenated state as the proximate cause, or at all events as an essential condition, of the tubercular diathesis.[1] "The specific remedy for the disease consists in the use of a preparation of phosphorus uniting the two conditions of being in such a state that it may be directly assimilated, and at the same time the lowest degree of oxidation." He gives the preference to the hypophosphites of lime and soda, in doses varying from ten grains to one drachm in twenty-four hours. The effect of these salts upon the "tubercular diathesis is immediate, all the general symptoms of the disease disappearing with a rapidity which is truly marvellous. On the one hand, they increase the principle, whatever that may be, which constitutes nervous force; and, on the other, they are the most powerful of hæmatogens, being infinitely superior to all medicines of that class hitherto known." In another place he remarks: "I know that they will prove, not only as sure a remedy in consumption as quinine is in intermittent fever, but also as effectual a preservative as vaccination in small-pox. Out of thirty-four cases so treated, all either in the second or third stage of the disease, nine recovered completely, eleven improved considerably, and

[1] Dublin Hospital Gazette, August 15th, 1857.

fourteen died." Subsequently, in a separate and lengthy monograph[2] (which has since been republished both here and in France and America) his views are elaborated and reiterated on the basis of a more extended experience, founded on the detailed reports of a large number of cases. Referring to the effect of treatment on various symptoms and conditions, the following is an abstract of the results stated :—

Condition.	Number of cases noted.	Number influenced for good.
Fever	44	41
Night-sweats	56	53
Loss of appetite	52	50
Vomiting	21	17
Sleeplessness	36	32
Dyspnœa	70	63
Cough	79	74
Expectoration	76	66
Diarrhœa	10	8
Menstruation	8	6
Strength	48	27
Emaciation	65	19

These nineteen gained flesh, and a number ceased to lose, but they were not actually weighed. This condition of variation in weight Dr. Churchill considers to be of very little value, more especially for purposes of prognosis. Of twenty-three who had hæmoptysis while taking the hypophosphites, only three had it then for the first time. Looking to the effect on the state of the lungs—out of seventy-nine cases, there was complete disappearance of morbid sounds in sixteen; simply a decrease of morbid sounds in six; a passage from one kind of morbid sound to another, after aggravation of a greater or less duration, in four.

"The unanswerable proof of the specific power of the hypophosphites rests upon the following facts, which now no longer depend on my sole observation, but have been confirmed by other physicians—their uniformly curative action in the first stage when there are no other complications; their greater potency in hereditary cases; their almost uniformly curative action in the case of children; their curative action in cases of acute phthisis, which are the only ones upon record, whereas every other remedy has failed; their uniformly curative and preventive action in all cases of suspected phthisis, even when there was strongly marked hereditary tendency." Further on, however, Dr. Churchill remarks: "In a word, the action of the hypophosphites is *specific* against the diathesis, and not *specific* against the already existing lesions, so that the more purely constitutional, so to speak, the disease is, the more rapid and complete is the action of the remedy."

Attention being thus drawn to the hypophosphites, they have from time to time been made the frequent subject of clinical experiment by those engaged in the treatment of the class of affections for which they had been recommended in such strongly eulogistic terms. Among those who very soon published views unfavourable to those of Dr. Churchill were the late Dr. R. P. Cotton and Drs. R. Quain and Risdon Bennett.

Dr. Cotton[3] employed the hypophosphites according to Dr. Churchill's directions "in nine male and eleven female adults," to use his own words. Of these, three were in the first stage, five in the second, and twelve in the third. All were unaffected by other than the usual complications. The remedy was administered for a fortnight; if no improvement was then observed, it was given up; but if the patients felt themselves relieved, they were placed on other treatment, with the view of testing what was fairly attributable to "specific" agency, or to other circumstances, such as improved diet, rest, &c. "Of the three patients in the first stage of the disease, two were not perceptibly influenced by the hypophosphites, but afterwards improved considerably on tonic treatment and cod-liver oil; the other felt much stronger, but he had been almost starved before admission, and he left before other medicines could be tried." "Of the five patients in the second stage of the disease two were not in any way influenced by the hypophosphites, but *improved* under different treatment; two slightly improved, but one of these subsequently advanced at a much more rapid rate under steel and oil; in the remaining case the symptoms became gradually worse from the advance of the disease. ..... Of the twelve patients in the last stage of the disease, one felt herself better under the hypophosphites than under any other remedy; one improved greatly, but not more than under the subsequent use of other tonics; three improved slightly, but afterwards progressed much more rapidly under steel and cod-liver oil; two were not at all benefited, but found themselves much 'better' under a change of treatment; in two cases no effect was observed, and in spite of all treatment the disease advanced; one of the patients became worse, but subsequently gained strength under oil and quinine; the remaining two died." Dr. Cotton concludes that this remedy "may in some cases have a tonic and beneficial influence, but to any specific action on tuberculosis it seems to have no claim." "Like phosphorus itself, it is a simple tonic adapted to certain depressed states of system."

In 1860 Dr. R. Quain, of Brompton, placed twenty-two patients (ten female and twelve male), taken without selection, under this treatment, and for longer periods than in the series first described, and with still more unfavourable results. "Of the cases so treated, six were more or less improved, three were improved but slightly and temporarily, in three the improvement was marked, but in one only has the improvement been permanent; of the two other cases, one continued using the hypophosphites for three months after leaving the hospital, growing weaker, and finally died; the other, a man, after leaving the hospital, continued the treatment for some time, but gradually grew worse, and is now dying. All the other sixteen cases steadily lost ground, and in six of these a decided improvement resulted on return to the usual treatment." Referring to the physiological effects of these salts as described by Churchill, "improved powers of innervation, the hair and nails growing more rapidly, an appearance of plethora or fulness, an unaccustomed sensation of feeling better and stronger after a few doses of the remedy," Dr. Quain states they were looked for "anxiously but in vain," and there was nothing more felt by the patient, nor noticeable by the physician, than if so many grains of carbonate of soda or prepared chalk had been taken.

Dr. Risdon Bennett's experience of the hypophosphites was not more encouraging. On the other hand, from time to time reports more or less favourable to its efficacy were published by Dr. Hislop, Dr. Dickson, and more especially by Dr. Thorowgood. In reply to the adverse criticism which the hypophosphite treatment received at the hands of the many eminent authorities who had satisfied themselves of its inefficiency, Dr. Churchill, in the work already referred to, declared that in all cases where a cure is not effected by the hypophosphites, the reason of failure will upon examination be found to depend on the following causes:—(1) Either the salts are impure; or (2) they are not administered according to his rules; or (3) independently of consumption, the patient is suffering from some other disease; or lastly (4), the extent of lung already involved is too great to admit of recovery.

Dr. Churchill complains bitterly of the report of the twenty cases treated at Brompton by Dr. Cotton, because the treatment was only continued for a fortnight; he says "such a trial looks like a sham." Dr. Quain's experience certainly is so very negative that there would seem to be considerable reason for the supposition that the salts employed by him were either impure or not the alkaline hypophosphites at all. Dr. Churchill urges also very strongly departures from his mode of administration as the reason for failures, which cannot otherwise be accounted for. But an examination of his successive publications shows plainly enough that his instructions as to doses, vehicle, and times for administration, have all, from time to time, been very materially changed. He seems also to have shifted his faith somewhat, in declaring the remedy "specific" against the diathesis, but not "specific" as regards the lesions; and also in urging their greater efficacy when he recommends them as a prophylactic, especially to the young and in the first stages in adults—precisely the conditions of the disease most amenable to all treatment. However, to judge from the following extract from his last pamphlet, his therapeutic faith seems still unbounded:—"In no single instance have I found the remedy to fail in its effect, or indeed not to produce even more benefit than could have been at first expected from it, if the degree of injury already sustained by the lungs previous to the use of the treatment be taken into account." This is certainly the reverse of "damning with faint praise," but likely enough to produce the same effect from the opposite process.

[2] Consumption and Tuberculosis: the proximate Causes and Treatment by Hypophosphites.
[3] Med. Times and Gazette, Feb. 15th, 1868.

Among those I have already referred to as more or less endorsing Dr. Churchill's views was Mr. Taylor, of Liverpool. His careful investigations bear out the idea that the absence even of the physiological effects of the drug, noted by observers such as Drs. Cotton, Quain, and others, may probably have resulted from the impurity of the salts employed. As regards their therapeutic qualities, he gives an allegiance, somewhat modified certainly, to the opinions of Dr. Churchill, viewing them more as "palliative" than "curative" in their action in phthisical affections. While, however, the specific action of these salts has met with scant acceptance from the profession, they seem now to be employed very generally as nervous tonics, in cases where phosphorus is indicated.

(To be concluded.)

OBSERVATIONS ON CATARACT IN INDIA;

WITH AN ANALYSIS OF 512 CASES OPERATED ON IN THE AZAMGARH HOSPITAL DURING THE YEAR 1878.

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THERE is, perhaps, amongst the whole category of diseases which are amenable to treatment by operative surgical interference only, none more peculiarly interesting than cataract. This is the case whether regard be had to the manipulative proceedings that are essential on the part of the surgeon in the operation for the relief of the disease, or to the serious consequences to the patient that are involved in the operation. The removal of a diseased lens from the eye, when accomplished with calmness, dexterity, and skill, is justly regarded as one of the finest illustrations of the perfection to which the surgical art has attained; whilst, when attended by a successful termination, there is no operation in surgery which to the patient brings a more satisfactory result, having the effect of relieving him from blindness and conferring upon him the inestimable blessing of vision—a vision which, when corrected by properly adjusted glasses, is generally little less than normal.

To the surgeon whose sphere of duties is placed in India cataract ought to be specially interesting, for here, amongst the countless millions of inhabitants, blindness from this cause is extremely prevalent. Till of late years, however, the disease seems to have attracted very little attention amongst European surgeons serving in India; for though in the large presidency towns there have long been ophthalmic hospitals, and surgeons who have done good and valuable work in ophthalmology, beyond the limits of those towns the people were left mostly to the tender mercies of the *sathiyas*, a class of itinerant native eye-surgeons, who practise the old operation of "couching," and who, in their periodical peregrinations through the towns and villages, manage to relieve the credulous people of their money, as well as, in most cases, to destroy whatever prospect of obtaining vision they previously possessed. The operation performed by this class is that of depression of the lens into the vitreous, and is not unlike that practised by European surgeons in days gone by; but the instruments employed by them in operating are of such a rough and primitive character that our forefathers can scarcely be conceived as having used instruments of a similar description, even in the dark ages of surgical antiquity.

During the last few years, however, eye diseases have been attracting considerable attention amongst European surgeons in India, especially in the north-west provinces, and it is very gratifying to find that the number of operations performed for the relief of blindness from cataract is steadily increasing year by year. In 1878 five hundred and twelve cases of cataract came under my observation in the Azamgarh hospital, in which I deemed an operation for the relief of the disease advisable. The special object of this paper is to give a summary of my operations on these cases, in all of which careful notes were systematically taken by my assistant-surgeon and myself. I trust that an analysis of a large number of cataract operations from the practice of a single operator, and performed in one year, may prove interesting, especially to my fellow-labourers in India.

The subjects of these operations varied very widely in circumstances, embracing persons of all castes and social positions; but the vast majority of them belonged to the poorest classes, and were ill-fed and poorly nourished. This was particularly the case with them during the past year, when distress was widespread amongst the people. Under these circumstances a very high percentage of success could not be expected. I have always noticed that the success attending the operation of extraction of the lens has been excellent in persons of the better classes, who are well nourished. Indeed, my experience in such cases is that when operated on at the most favourable season of the year, it is very rare to have an unsuccessful result. Thus by a selection of cases a very high degree of success might be obtained in India. My object, however, has not been by the selection of the most favourable cases to show a high percentage of success, but to afford relief from blindness to the greatest number of persons possible. With this end in view I operated in every instance in which I considered that there was any reasonable prospect of success, conscious of the fact that, even should no benefit be derived from the operation, the patient would be in no worse condition than before its performance. Nothing is to be gained in such cases by waiting, for an improvement in the condition of the patients is not to be expected, and if not operated on they go away from hospital, as a rule, never to return, or to fall into the hands of the *sathiyas*, with what result my daily experience amongst the blind seeking relief at the hospital testifies. Scarcely a day passes by without persons presenting themselves at the hospital whose eyes have been utterly destroyed by these native eye surgeons.

The extreme frequency with which cataract occurs amongst the natives of India is a matter to which I have already alluded. A not less noticeable feature of the disease is the early age at which degeneration of the lens occurs in a great number of instances. To what circumstances are this unusal frequency with which cataract is met with, and this premature degeneration of the lens, attributable? This is a question that has for some time past engaged my attention, and with a view to its solution I have inquired thoroughly into the history of each patient the subject of cataract operation. There can, I think, be no doubt that the frequency with which cataract is met with amongst the inhabitants of India, as compared with those of more civilised countries, is to a certain extent due to the fact that until recently ophthalmic surgery was little practised by European surgeons in India; and the successes of the *sathiyas* being so poor, and the pain that attends the inflammation arising in the majority of cases from the depressed lens so excruciating, that "couching" has never become a popular mode of treating cataract amongst the people. Thus, it is that in a large majority of the cases that present themselves for treatment in our Indian hospitals the cataracts have existed for several years; indeed, it is not uncommon to meet with cases in which the degeneration of the lens has existed for ten, fifteen, and even twenty years. The striking contrast, in this respect, that India presents to England is no doubt mainly to be accounted for by the existence in every large town in the latter country of ophthalmic hospitals, as well as by the facility with which patients can reach them, owing to the extensive network of railways that pervades the whole country, so that cataracts are no sooner "ripe" than they are sent up for operation. The unusual prevalence of cataract amongst the people may partly be accounted for by the above consideration; but doubtless there are peculiar causes at work in India, which tend to induce opacity of the lens more universally and at an earlier age than in England.

Syphilis has long been regarded as an important factor in inducing this degeneration of the lens both in India and elsewhere. I am not aware, however, that the general impression as to the part which syphilis plays in producing opacity of the lens has ever been put to the test of actual facts derived from the analysis of a large number of cases. It may not be uninteresting to examine into the extent to which syphilis prevailed amongst the persons on whom these 512 operations for cataract were performed, and what influence, if any, it exercised in inducing degeneration of the lens. I find that these operations were performed amongst 438 persons, both eyes having been operated on in 74 instances. In every case I made particular inquiries with a view of eliciting if the person had ever suffered from syphilis, with

the result that out of these 438 persons in only 13 was there any history of venereal disease. Of these 13 persons 4 had had gonorrhœa, and 9 had suffered from syphilis. I do not think there is any reason to doubt their statements on this point, for the natives, as a general rule, are not particularly anxious to conceal the fact of their having had venereal disease. Besides, I very frequently verified their statements by examining their genital organs to see if any scars or discolorations resulting from syphilitic sores existed. From these facts, then, are we justified in thinking that syphilis exercised any peculiar or widespread influence amongst these people in inducing degeneration of the lens? There is, in my opinion, no evidence to support such a view. The proportion of syphilised persons to the whole number operated on (9 in 438) is certainly not greater than we might expect amongst the general population. The question as to the influence which syphilis exerts in causing cataract in India is one to which I have given considerable attention, and my experience so far would lead me to believe that syphilis cannot be regarded as playing any specific or widespread influence in the production of cataract.

The impression that diabetes is a common cause of cataract, or rather that cataract occurs with unusual frequency amongst diabetic patients in European countries, seems to be very generally entertained. Being desirous of ascertaining what part this disease plays in India in accounting for the prevalence of cataract, I have been in the habit of making inquiries in every case of cataract coming under my observation as to the existence of symptoms of diabetes, and of examining diabetic patients with reference to the existence of cataract. I find that amongst the 438 patients who were the subjects of the 512 cataract operations there were only two who suffered from diabetes. In one of these cases I removed both the degenerated lenses, in the other only one. These three operations were successful. During my three years' Indian experience I only remember having met one other case in which cataract and diabetes were present in the same person, though the latter disease is by no means uncommon in this country. My experience of the two diseases is that their existence in the same person is rare. Whether in those cases in which they do occur together they stand to each other in the relation of cause and effect, or that their simultaneous occurrence is due to mere coincidence, is a matter in which I am unable to give a definite opinion. One thing, however, is obvious—viz., that diabetes will not account for the frequency with which cataract is found in India.

That the chief cause of cataract in India, as elsewhere, is that decay of the tissues which is coincident with declining age is, I think, a fact patent to anyone who has paid any attention to the matter. In a large number of the cataract patients that come under my observation I notice that the degenerated lens is but one of the many indications of general decay of the tissues present; and that that characteristic indication of fatty degeneration—the arcus senilis—is very frequently present. There can be no doubt either that the large extent to which natives suffer from dysentery, diarrhœa, malarial fevers, and other diseases which tend to exhaust the system, impoverish the blood, and induce premature old age, has the effect of accelerating degeneration of the lens-tissue at an earlier age than is natural.

In addition to the above considerations there are two important special causes at work in India, to which I think is attributable in large part the excessive frequency with which cataract is met with amongst the natives. These are:—

1. The low system of diet which, owing to their extreme poverty, the masses of the people are compelled to exist on during the greater portion of the year. It must be remembered that the peasantry of India is the poorest in the world, and that the vast majority of the people scarcely ever taste animal food. To the insufficient quantity and innutritious quality of the food is to be attributed in large part that premature old age which is so marked a feature of the people. With this premature decline of the system it is natural that one of the first organs to suffer should be such a one as the lens, which has no direct muscular supply of its own.

2. It seems to me, however, that the main cause of the early degeneration of the lens which is characteristic of the natives of India is to be found in vascular disturbances within the visual organ itself, produced by the extreme heat and glare of the sun. There are few Europeans in India who can, with impunity, expose their unprotected eyes for any length of time to the excessive glare of the sun in the hot weather. It suggests itself, as a natural inference, that the poor native peasant, who has to work all day without any protection from the fierce rays of a scorching sun, should not escape unharmed. That this inference is supported by facts is obvious to anyone in the habit of making ophthalmoscopic examinations of the eyes of natives. My experience is that congestion of the deep-seated vessels of the eye, especially those of the choroid, is very common amongst the natives, and may exist without any apparent defect of vision. It frequently happens that an ophthalmoscopic examination of the deep-seated parts of the eyes of those affected with cataract is practicable, owing to the partial translucency of the lens. In such cases I have noticed that signs of congestion of the deep-seated vessels are not unfrequently present with cataract. It seems as if a chronic congestion of the choroid may exist for some time without producing any disturbance of vision, and may have the effect eventually of inducing opacity of the lens by interfering with those arrangements by which an efficient nutritive supply is ensured to that part whilst the visual functions of the deep parts of the eye remain unimpaired.

(To be continued.)

ON TINEA BARBÆ: THE SO-CALLED PARASITIC SYCOSIS.[1]

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WRITERS on cutaneous diseases are almost unanimous in the opinion that ringworm of the beard is an exceedingly rare affection in England and Germany; though more common in France. Three well-marked examples having come under my care during the last few months have led me to think that it is, perhaps, after all, not of so very infrequent occurrence in Scotland, though, from special circumstances, the recognition of its parasitic nature is not always easy. There may be some occult cause which at times influences its prevalence. Hebra, who up till 1874 had during thirty years seen three hundred cases of ordinary sycosis, met with his first instance of tinea barbæ in 1876. Neumann observed a case in 1874; and Lang has recorded another in the *Vierteljahresschrift für Dermatologie und Syphilis*, last year, as being under his care at Innsbruck. Duhring in Philadelphia, and Robinson in New York, have both encountered examples; the latter, indeed, appears to have seen a good many.

CASE 1.—My first case exhibits the disease in its mildest form, in which it bears the closest resemblance to ordinary ringworm of the head. Mr. A. B——, aged twenty-four, a gentleman with fair hair and fine fair whiskers and moustache, was sent to me on Sept. 13th, 1878, by Dr. Connal, of Peebles. A few weeks before he had had his chin shaved by a barber in that district, and soon after began to have small itchy and scaly spots on his chin, which spread in circles. He learned afterwards that there were in Peebles about that time some instances of ringworm of the head in children, and that some others, who were shaved by the same barber as he was, were subsequently affected similarly to himself. It is not quite clear, however, whether the barber ever shaved any of the children's heads who were so affected. When he came to me, there were here and there on the chin slightly erythematous spots, bearing numerous white branny scales, and occasional minute pustules perforated by hairs; but the scaling was the most prominent, the pustulation and erythema the least marked, feature. Acetic acid had been applied, and epilation ordered, and to some extent carried out. On removing one or two hairs—which could be done without much pain, though the hairs were not yet loosened in their follicles—and examining them, after moistening them with liquor potassæ, under the microscope, the mycelium of Trychophyton tonsurans was seen ramifying freely over the surface of the hairs, even down to the lowest part of the bulb. It had not yet penetrated into the shaft, so that the fibrous structure was

[1] Read before the Edinburgh Medico-Chirurgical Society, April 2nd, 1879.

normal, the parasite having only yet insinuated itself between the inner root-sheath and the hair. Little inflammatory action had so far been set up, though the fungus was plentifully present. Daily shaving was recommended, epilation of any loose and diseased or black hairs, and saturating the part several times a day with freshly prepared sulphurous acid.

On the 17th he wrote me that he thought the application had done some good, but that his chin had swollen a good deal and felt very painful when swabbed with the acid. The acid was therefore discontinued, the chin fomented with hot water and dressed with zinc ointment. I learned afterwards from Dr. Connal that Mr. A. B—— got quite well and had no further trouble.

CASE 2.—W. M——, aged sixty, porter, presented himself at the Royal Dispensary on the 24th August, 1878. He stated that he had been quite well till three weeks ago, when he was shaved by a barber, who cut his chin and then put a piece of cotton-wool on the wounded part. He did not at first feel any inconvenience, but the part soon became, first itchy, then inflamed and painful. The chin was covered with hair of a grey colour and a quarter of an inch long. In its centre was a circular patch, the size of a florin, covered with a dirty scab. Underneath this the skin was boggy and inflamed, and bore numerous pustules the size of a pin's head and larger, each perforated by a hair. The hairs came out easily over the inflamed area, and on examination in many instances were found to contain spores and to be permeated by the mycelium of trichophyton tonsurans. The crusts were directed to be softened with oil, the part kept shaved, the loose hairs to be extracted, and Hebra's diachylon ointment, spread on strips of linen, to be kept closely applied. I visited the man several times at his lodgings, but he was careless in attending to treatment. He epilated the hairs, however, and the disease did not spread further. On Sept. 7th numerous hairs were examined, but no parasite could now be found. He soon after met with an accident, was admitted into the poor-house and lost sight of, but I learned that he got quite well and the hairs again grew healthily on the previously affected part. In his case also there was no trace of ringworm on any other part of his body, and none of his acquaintances had it, so far as could be ascertained.

CASE 3.—P. B——, aged twenty-four, a joiner, consulted me on March 4th, 1879. Six weeks ago he went to have his chin shaved by a barber, whose shop he frequented. Soon after he noticed a small, very itchy, scaly spot, under his chin, which spread, and at the same time became more hot and irritable. The barber assured him he had not shaved anyone with ringworm, so far as known to him at that time, and by his advice he allowed the beard to grow. There was no dog in the house where he lived. Shortly after another similar spot made its appearance, between the lower lip and chin. He is a healthy, rather florid man, with a thick beard of a light-reddish colour, side whiskers, and moustache. The hairs of the beard were a third of an inch long. He is not married; none of the persons where he lives have ringworm, nor is there any trace of tinea tonsurans on any other part of his body. When first seen there was a red, swollen, and dense protuberance, nearly the size of half a walnut under his chin. It had a somewhat shining surface, was thinly covered with hairs, and pus was seen to exude by the side of some of these. The hairs on this prominence came out with great ease, and without pain; some looked swollen and stunted, and with them came away a certain amount of a gummy material. A similar but smaller spot occupied the space between the lower lip and chin. The hairs examined were crowded with ramifying mycelium, but no great number of spores. He was directed to shave every day, to pull out all the loose hairs, and to apply an ointment composed of equal parts of vaseline and lead plaster, with ten grains of thymol added to each ounce. When the hairs had been removed from the chin by shaving, half a dozen small red scaly spots were disclosed, on which the hairs were as yet not so much loosened. On March 12th the itchiness was quite gone, and the patches had been so thoroughly epilated that no trace of hair was visible. There were some small superficial abscesses, and the lump under the chin was still hard and infiltrated. No fungus elements could now be found in any of a large number of hairs examined, yet the irritation had by no means subsided.

These three cases exhibit a gradually increasing severity, and illustrate the various phases of the disease. In the first instance, though the affection had existed several weeks, the parasite had obtained but a slight hold, this being probably very much due to the position in life of the patient, and his careful habits as to cleanliness, but also, and perhaps more, to the fact that parasiticide remedies had been used and epilation practised, while the beard had been kept short by the razor. The cure, therefore, was easy, rapid, and complete. In the two other examples all the features which have been described in this form of tinea were markedly present. Both had also not shaved after the disease was first noticed, thus permitting the parasite to effect greater ravages. In none of the cases could any direct source of infection from tinea tonsurans be traced. In the first, it is true, cases of ringworm in children were reported to be prevalent at the same time in the neighbourhood, but in the other two no similar history was elicited. Neumann and others have observed the transmission of the disease from the lower animals, as dogs, horses, and cattle, to man, but here there was no such origin. In Lang's case, already referred to, the source was undoubtedly a house dog. We are shut up to the conclusion, then, that it was directly communicated in shaving, and I am inclined to believe that it is the lather, and not the razor, which conveys it. We know how little effect soap alone has in removing ringworm, even when the strongest and most alkaline is employed; the action is probably that of a solvent to the horny cells of the epidermis, thus a more rapid expoliation of cuticle is induced, and the parasite is carried off with it *en masse*. The barber strops and wipes his razor, but the brush and soap dish receive little attention; the same brush, dipped, perhaps, for a moment into hot water, is used for all and sundry, and not improbably implants the spores. Once placed in favourable conditions for growth, two opinions are held as to how the fungus enters the hair. One is that, having penetrated between the inner root-sheath and the hair, the fungus descends into the follicle, and having reached the formative papillæ, pierces there the soft cells which compose the bulb of the hair, and is carried up into the shaft. The hair in growing carries the fungus with it, while the mycelium itself insinuates itself through the fibrous structure. Another opinion is that of Dr. Thin, that the fungus never descends deeper into the follicle than a short way below the point where the sebaceous gland opens into it, that it never enters the actively growing cells of the bulb, but finds its true nidus in effete epithelial structures.

With reference to this, I may say that I have found the mycelium in several instances on the surface of the hair bulb, but never within its structure; but before offering an explanation of what takes place, I must ask attention for a short time to a peculiarity in the structure and growth of hair. A hair may be said to consist of a bundle of fibres, enclosed within a layer of flat and partially overlapping cells. These cells are imbricated in a direction from below upwards; the lower sheathing cell projects a little over the one above, giving a slightly serrated appearance to a hair, so that it conveys the impression to the finger drawn along it of being smooth when moved from root to point, but less so when drawn in the opposite direction. This arrangement serves two important offices in the growth and nutrition of hair. By it the hair in growing is enabled to sweep out its own follicle. The margins of the scales covering the hair pointing upwards carry before them as they advance the débris which would otherwise accumulate within, consisting of effete epithelium and sebaceous material. That this is no mere fancy is shown by two microscopic preparations I have now before me. These are sections of a slightly inflamed papule of lichen pilaris, removed from the back of the arm of a young man. In one may be seen the upper portion of the hair-follicle dilated, and the space between the hair and inner root-sheath filled loosely with epithelial scales lying vertically, some even resting on the serrated margin of the hair. The second exhibits the hair just outside the follicle, surrounded by a mass of dead epithelium, arranged also in a direction parallel to the long axis of the hair, and thus composing the papule of lichen pilaris. A second function which this mode of imbrication of scales on the surface of the hair fulfils is that of facilitating the removal of any foreign matters which might otherwise attach themselves to it. This arrangement is not peculiar to hairs. A familiar example occurs in a blade of grass, where the fine serrations all point forwards, and from their hard, silicious nature, cut sharply as a saw does. In grass, however, the function is entirely different from that which we have seen is exercised by the projecting scales of hair;

it is by means of it that the dewdrop is made to tarry on the leaf, where it sparkles as a diamond in the morning sun, and refreshes the thirsty blade through its open stomata, instead of trickling off at once as it would do were the surface smooth.

This peculiarity of the structure of hair, so useful under normal conditions, becomes a source of weakness when the spores of a fungus gain access to the follicle. The mycelium, as it penetrates between the inner root-sheath and the hair-shaft, insinuates itself beneath the projecting edge of the scales, just as ivy does under the slates of a house, and thus reaches the interior, where it branches freely in the fibrous core.

Dr. Robinson, of New York, has shown that in ordinary sycosis the disease begins in the peri-follicular areolar tissue, and affects the interior of the follicle in time by extension; hence the hairs are never loosened in the first instance. In tinea barbæ, on the contrary, the lining of the follicle is attacked first, and the surrounding tissue secondarily. The parasite by its presence sets up irritation, the follicular walls are early distended by inflammatory exudation, and the hairs soon become loose. Detection of the fungus is not always easy, as it rapidly perishes as a result of the inflammation and pus-formation. Hairs, however, which no longer contain mycelium or spores are often found to be spirally twisted and deformed, and are long in regaining their healthiness even after the disease is cured.

The reason why in tinea barbæ so much greater irritation of the parts is induced than is met with in most cases of tinea tonsurans in children seems to me to be due to the preponderance of mycelium over spores in the former. When the structure of a diseased hair from the beard is dissolved by means of long maceration in liquor potassæ little is seen but a meshwork of branching mycelium: a hair from ringworm of the head so treated exhibits multitudes of spores and little mycelium. Actively growing mycelium causes much more irritation than any number of spores, as is well seen in the erythematous ring which marks the advancing margin in tinea circinata, and in eczema marginatum, and even in many cases of tinea tonsurans. It is, then, to the excess of mycelium over spores in tinea barbæ that we must ascribe the severe reaction which accompanies it.

Another explanation of the causes of the irritation generally set up by the tricophyton has been suggested to me by my friend Mr. J. Y. Buchanan, late of H.M.S. *Challenger*. It is that the fungus is either itself acid or develops an acid, as the fungus of mould, *mucor*, does. The recent artificial cultivation of the tricophyton by Dr. Atkinson, of Baltimore, lends additional weight to this, as he concludes an elaborate paper on the "Botanical relations of Tricophyton Tonsurans,"[2] by stating that "it seems to me that a fungus presenting the features displayed in my cell cultivations (of tricophyton) may, without hesitation, be referred to the *mucors*." Chemistry is here a fit handmaid to the microscope, each confirming the other in an unexpected manner.

As to the treatment of tinea barbæ, epilation is the most necessary part; but the kerion, the secondary swelling and inflammation, is often obstinate. Except, then, in the very early stage, any direct parasiticide is unnecessary, and as all are more or less irritating, their use should be avoided. Soothing measures are best suited to the swollen and tender parts, and under their use the inflammation gradually subsides.

A CASE OF ALCOHOLIC EPILEPSY, WITH PARTIAL CONVULSIONS AND TEMPORARY APHASIA.

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I WILL briefly narrate this case, which seems to me to possess several points of interest.

On the 9th of March of last year, Mr. A——, a stout plethoric man, of about fifty years of age, came under my care. I was informed by his wife that he had been drinking hard for the preceding fortnight, and had during that time gone to bed every night helplessly intoxicated. On the morning of my first seeing him he awoke her, and, having complained that he felt very unwell, he requested her to get him some brandy-and-water. On her return with the brandy she noticed that his speech was affected, for she could not understand very well what he said. He drank the fluid, however, and then lay down and went to sleep; but he had not slept long when he was attacked by a fit, the first Mrs. A—— believes he had ever had.

I found the patient lying on his back in bed, quite unconscious, and breathing like one in a deep and troubled sleep. The skin was moderately warm, the face was bloated and congested, the pupils of the eyes were dilated and rather insensible to the action of light, and the teeth were firmly clenched. The pulse was regular, rather weak, and about 84 beats in a minute. He had no appreciable symptom of disease of the heart or kidneys, or of paralysis. Whilst I was examining him he suddenly uttered a subdued cry, and then became convulsed in a peculiar and partial way. The muscles of the right side of the face performed a series of frightful grimaces. His head was pulled violently towards the right shoulder in a series of jerks, and each jerk was accompanied by a short sharp moan, as if caused by severe pain. The right arm was also violently convulsed, each clonic spasm causing it to spring off the bed in a curious manner. No other part of the patient's body was affected with spasm in the slightest degree. The convulsions lasted about three minutes, and towards their termination frothy saliva issued from between the teeth and lips. When the convulsions ceased the patient lapsed into the same comatose state in which he was before their onset.

I prescribed for the patient an enema and a mixture, both containing bromide of potassium. The enema was administered immediately, and a dose of the mixture was to be given to him as soon as he could swallow. Some time after I left the house he was attacked by another severe fit, and when it ended, his attendants by some means opened his mouth and poured a dose of the mixture down his throat. After swallowing this dose he had no more seizures, and when I called in the evening I found him sitting up in bed taking some fluid nourishment, apparently rational, but quite dumb. He had no symptom of paralysis further than that sensation could not have been perfect in his right hand, for occasionally he rubbed it with the left and straightened and bent the fingers as if they were cramped. On the following morning (10th), although the patient's general state had improved, he was still unable to articulate a single syllable. His wife and some of her relations were anxious that he should make his will; the will was made and the patient to all appearance read it over carefully and seemed to comprehend its contents, but when he endeavoured to sign it, the signature was such an unreadable scrawl that it gave rise to some merriment. On the morning of the 11th he was downstairs walking about his sitting-room, and able to speak one or two words imperfectly, but still unable to write his name. After this he rapidly recovered his speech and power of writing, and, with the exception of a very slight attack of delirium tremens, he soon recovered his usual state of health, which is remarkably good.

This patient has, neither before nor since the fits, suffered from epilepsy, nor has he shown any symptoms of brain disease, which would account for one of the most striking symptoms—the local spasms. There can be no doubt, however, from the great quantity of spirituous liquors which he consumed during his fortnight's indulgence, but that his blood at the time of the fits and for several days before their appearance must have contained a very high percentage of alcohol. The formidable symptoms were caused then, I believe, by the direct action of alcohol on the patient's nervous centres, aided in all probability by the alcoholic impregnation of his blood, which prevented the vital fluid from absorbing an adequate supply of oxygen for healthy nutrition. But it is strange that whilst the alcohol, from its equal diffusion through the whole mass of the patient's blood, acted generally on his nervous centres, in addition it should also act specially on limited parts of those centres, as evidenced by the brachio-facial spasms and the aphasia. Why the alcohol should have acted thus locally it is difficult to form an opinion, and the only suggestion I would venture to make in explanation of the fact is that the man is a fluent speaker and a good vocalist—gifts which, if we admit cerebral localisation of function, might indicate some peculiarity of organisation or nutrition of the parts of the brain which preside over these functions,

[2] New York Medical Journal, December, 1878.

and which may have rendered them peculiarly susceptible to the poisonous blood. As the patient's speech was first affected, it might be that Broca's region was primarily attacked, and then, from their proximity, the motor centres of the face and arm became involved. The aphasia was not accompanied by any marked symptom of paralysis, but the clonic spasms at the time of the fits indicated, I think, the intimate relations which seem to exist between aphasia and paralysis of the right side, and especially of the right arm. From the transient character of the symptoms, the pathological lesion of the affection was in all probability a congestion of the cortex of the brain, which congestion gradually subsided as the alcohol was being eliminated from the system.

In connexion with the preceding case of temporary aphasia, I will mention a curious instance of still more transient loss of speech, which might be called the "aphasia of anger," that came under my observation a few years ago. Many people, when under the influence of anger, stutter and stammer so much that their language is hardly intelligible. The case I briefly give was an exaggerated example of this kind. A gentleman, about sixty years of age, a very excitable and irritable man, and most intolerant of contradiction, one day entered into an argument with a very self-opinionated man on the policy of the disestablishment of the Irish Church, and both became so warm on the subject that "from words they almost came to blows," when suddenly their argument was brought to a close by my patient losing his speech. Those about him became alarmed, and thought he had a stroke of apoplexy. I found him sitting in a chair, hot and perspiring, in a towering passion, gesticulating towards his former, but now much frightened, opponent, and making futile efforts to speak, but quite unable to articulate a word that could be understood. A person present, thinking that he wished to communicate something particular, handed him a pencil and slate, which he took, but, after making a few vain attempts to write, threw them from him impatiently. In about an hour the speech began to return, and in two or three hours it was quite restored, and nothing remained of the attack but a little exhaustion. This gentleman, who has since died, had no apparent disease of the heart or brain. I have learned that on several occasions he had similar attacks when under violent excitement.

The prime factors and the exact pathology of many cases of aphasia and convulsions are still, I think, clouded in considerable obscurity, notwithstanding the recent great advances towards the elucidation of cerebral disease.

Lincoln.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

SEAMEN'S HOSPITAL, GREENWICH.

LARGE PRE-RECTAL ABSCESS SIMULATING EXTREME DISTENSION OF THE BLADDER.

(Under the care of Mr. JOHNSON SMITH.)

WILLIAM P——, aged twenty-one, a waterman, was admitted into the hospital on Nov. 26th, 1878. According to the report of Dr. T. Creed, of Greenwich, who had had previous charge of the case, this patient, fifteen days before admission, and soon after prolonged exposure on the river to cold and wet, had been attacked with severe pain over the abdomen, and with vomiting of biliary fluid. During the following ten days he had suffered from frequently repeated attacks of this kind, and alternately from obstinate constipation and profuse diarrhœa. At the end of the first week a fulness had been noticed on the lower part of the abdomen, which had subsequently increased in size so as to have formed a prominent swelling.

The patient, when seen shortly after admission, was found to be anæmic and very feeble. The skin was hot and dry, and the face expressive of anxiety. He complained of severe pain across the lower part of the abdomen. He was lying on his left side, and could not sit up in his bed without difficulty. The urine was passed frequently, in small quantity at a time, and had a very deep-red colour. In the lower portion of the abdomen was a very prominent oval swelling, extending from the pubis almost as high as the umbilicus, and involving an equal extent of each lateral region. This swelling, the front surface of which was quite smooth, was extremely tender. It could be moved to a slight extent from side to side, gave a distinct feeling of fluctuation, and was dull on percussion. The integument of the hypogastric region, though much stretched over the swelling, was pale and free from congestion. No œdema was observed in either groin, or in any portion of the anterior wall of the abdomen. No complaint was made by the patient on pressure over those regions of the abdomen that were not occupied by the swelling.

After the patient had been in the hospital for about an hour a No. 8 silver catheter was passed without difficulty along the urethra, but though introduced to almost its whole length it gave exit to but a few drops of urine, and could not be freely rotated. On subsequent digital exploration of the rectum there was felt, just above the prostate, a large elastic tumour, in which fluctuation could be distinctly made out on pressure over the front of the abdominal swelling. This tumour having been punctured with Cock's instrument used for paracentesis vesicæ, the removal of the trocar was at once followed by the discharge through the cannula of a thick greenish-yellow pus, of a very offensive and distinctly fæcal odour. During the flow of this purulent fluid, of which seventy-six ounces were collected, the abdominal swelling gradually collapsed. The cannula was left *in situ*, and a long piece of elastic tubing fixed to its outer extremity in order to conduct any subsequent discharge into a vessel placed below the bed.

Sixteen ounces of pus mixed with blood was passed during the night after the operation, and ten ounces of similar fluid during the following day. The discharge afterwards rapidly ceased, and the general health of the patient continued to improve until December 2nd, when, in the course of a few hours after the removal of the cannula, he suffered much from short and frequently repeated attacks of acute pain over the left side of the abdomen. On the following day he was quite well. On Dec. 14th he was allowed to walk about, and on the 19th he was discharged as cured.

MONTGOMERYSHIRE INFIRMARY.

TWO CASES OF DISEASE OF TARSUS; AMPUTATION; SECONDARY HÆMORRHAGE; ANTISEPTIC TREATMENT; RECOVERY.

(Under the care of Dr. PRATT.)

CASE 1.—T. H——, aged twenty-five, a miner, had a year previous to admission, according to his own account, somehow sprained his right foot by treading upon a stone, and had suffered since principally from want of power in the limb.

On admission, Oct. 15th, 1878, the foot was not much swollen, and the ankle-joint was mobile; but there were two openings discharging slightly, one on each side of the foot, about the middle, and these two openings were found to communicate. No bare bone could be detected. A strumous enlargement of the left ulna and of the right radius was found at the wrists, otherwise the health was good, as also was the family history. Chronic synovitis of the common synovial sac of the foot was diagnosed, and a very doubtful prognosis with regard to the safety of the foot was given.

For two months after admission various means of cure were tried: counter-irritation by tincture of iodine, complete immobility secured by a plaster-of-Paris bandage, cod-liver oil, and full diet. Nothing availed. The foot got gradually worse, and at the end of the two months dead bone could be found extensively. On Dec. 20th, 1878, Dr. Pratt resolved to remove the foot by "a Syme." The patient took chloroform well but slowly, and "a Syme" was performed with all antiseptic precautions. In order to secure a bloodless operation an Esmarch's elastic bandage was used, on the removal of which it was found difficult to control the hæmor-

rhage, as after securing the principal arteries free bleeding still continued. Ultimately all hæmorrhage seemed stayed after twisting a number of minute vessels, sutures were put in, a drainage-tube inserted, and the stump dressed.

The operation took place at noon, and at 3 P.M. the antiseptic dressing was found saturated with blood. Under the spray the dressing was removed, the sutures withdrawn, and the bleeding surfaces thoroughly examined. One or two vessels were secured, notwithstanding which blood oozed very freely from the flap and ends of the two bones. Solid perchloride of iron was applied until all the cut surfaces were thickly coated with it. The hæmorrhage seemed now to be controlled, the flap was brought up, and kept in position by means of a pad without sutures, and a good deal of pressure was maintained by the bandage. The drainage-tube was, of course, reinserted. All this day the patient's stomach continued very irritable, and all food was rejected.

Second day.—At 8 P.M. a slight oozing appeared through the dressing. This oozing had increased by 5 P.M., and still more so by 8 P.M. Under the spray the stump was freshly dressed. Without drawing back the flap, dilute tincture of iron was injected between the bleeding surfaces, and pressure by pad and bandage again applied. The patient had slept very little during the previous night, he was very restless, and his stomach continued irritable. To have a dose of bismuth, and a hypodermic morphia injection.

Third day.—Patient had had a better night, and was able to retain food. Under the spray the stump was again dressed. All looked well, with only a slight sanguineous discharge. Medicine and hypodermic injection at night continued.

Fourth day.—Stump was again dressed under the spray. All looked well, with only a slight healthy discharge. During the afternoon, however, the patient had a slight rigor, and the temperature, which up to now had not exceeded 101°, was found to be 103·5°, rising to 104·9° at 9 P.M. Pulse 130, full. The patient was very excited and restless, but became calmer with the fall of the temperature to 102·4° at midnight. Medicine and hypodermic injection continued, with purgative in the morning.

Fifth day.—Decidedly better; bowels well opened; no recurrence of rigor. Temperature 100°; pulse 120, good.

Sixth day.—Patient improving. Temperature normal; pulse 112, good. Under the spray the stump was dressed, and all was found looking well. The edges of the wound were once more brought together by silver sutures. These sutures were allowed to remain till they worked their own way out, when the flap threatening to gape, three new ones were inserted with most excellent effect. From this day everything went straightforward; the patient ate and slept well, and on the thirtieth day his recovery was complete, with an admirable stump.

On examination of the foot after removal it was found to be extensively diseased, not a single bone of the tarsus being sound.

CASE 2.—E. D——, aged nineteen, a farm labourer, was admitted on December 28th, 1878. The history he gave of himself was that about one year before he felt his left foot give way under him while carrying a load of coals, but for three months subsequently he did not suffer either pain or weakness in the limb. At the end of that period he suffered considerably from pain and weakness about the ankle and foot, and in July last he obtained surgical advice, from which he did not derive much benefit. His foot gradually grew worse, all work was of necessity abandoned, and an abscess appeared and burst beneath the inner ankle, shortly after which he was admitted an inmate of the infirmary.

On admission he appeared a healthy-looking, clean-skinned lad, without disease of any other part excepting the left foot. That foot on examination was found swollen all round from ankle to ankle, more particularly below and behind the inner malleolus, where there was an opening from which came some purulent discharge, of a moderately thick consistence. Signs of severe pain could be elicited by pressure on the heel; but flexion and extension of the ankle-joint were painless; not so any lateral movements, which were decidedly painful. In a day or two extensive disease of the os calcis could be detected, the probe going almost through the bone in several directions. The diagnosis was evident, and the prognosis with regard to the foot, owing to the rapid progress of the disease, was decidedly bad.

The patient was kept in bed, and the limb at perfect rest. The sinus was injected with tincture of iodine, and quinine and iron were taken internally along with full diet. The disease, however, made rapid strides. The ankle-joint soon became immobile, and severe pain was expressed whenever any attempts were made at movement. Swelling and redness appeared behind the joint. The evening temperature rose, and appetite declined. Operative proceedings of some kind were imperative. At first Dr. Pratt thought of gouging or excising the os calcis, but, taking into consideration the rapid progress which the disease was making, he rejected those minor operations as incapable of conferring any permanent benefit, and he determined to remove the entire foot by a "Syme."

On the 1st February the operation was performed in the usual manner, with the strictest antiseptic precautions, and the use of an Esmarch's bandage. The principal vessels were tied, and the ends of the ligatures cut short; and, as a good deal of oozing still persisted, solid perchloride of iron was rubbed over the ends of both bones and wherever else blood appeared to leak. A drainage-tube was then put in, and silver sutures inserted to keep the flap in position.

The operation took place at noon. At 8 P.M. the antiseptic dressing was found soaked with blood. Under the spray the dressing was removed, and as blood was dripping rather freely through the drainage-tube, and as pressure was not sufficient to control it, dilute tincture of perchloride of iron, as in the former case, was injected through the tube, with the result of soon stopping the flow of blood. The temperature at night rose to 100°.

Second day.—The patient has had a moderately good night, but the apparatus was found stained with blood. Under the spray it was removed. The stump looked healthy, but there was a considerable sanguineous dripping through the tube. The iron was therefore applied again in small quantity, and this time effectively. Evening temperature 101°; morning 99·5°.

Third day.—Stump dressed, looking well, with perfect drainage. Evening temperature 101·2°.

Fourth day.—On dressing the stump the two lower sutures were found to have given way, and that part of the flap derived from the soft parts covering the back part of the os calcis on the inner side, looked puffy, unhealthy, and lacking vitality. New sutures were inserted, and a gauze pad applied so as to relieve tension. In the evening the patient became flushed and irritable. Had a dose of bismuth. Evening temperature 102·6°.

Fifth day.—The patient had passed a fair night, but the dressing this morning revealed the unhealthy part of the flap to be worse, with manifest fluctuation. A free opening was made and a quantity of purulent matter evacuated, and a second drainage-tube introduced, as this part was evidently not drained by the first. Both tubes were of an extra large size, and the advantage of this size was proved by the efficient drainage of the stump, the particles of iron cast off from the granulating surfaces passing readily through, great quantities coming away when a stream of carbolic lotion was sent through the tube. The bismuth continued. Evening temperature 103°, the highest reached.

Sixth day.—Stump looking better; the unhealthy part very much improved. No collection of matter anywhere. Evening temperature 102·2°.

Seventh day.—Stump improving. All fears for the safety of the flap gone. Temperature normal.

During the following days the stump continued to improve rapidly. The margins of the wound united well.

On the fourteenth day all sutures were removed; and on the twentieth day there was no further use for a drainage-tube in the original wound, but that in the opening below and behind still remained, a smaller size being used after a time, and by it discharge continued up to March 20th, when the lad was quite convalescent with an excellent stump.

On examination of the foot after removal the os calcis was found to be entirely diseased—a mere shell of softened matter. The lower surface of the astragalus was also diseased, being red and soft. The synovial membrane of the ankle-joint was very much injected.

Remarks by Dr. PRATT.—These two cases are interesting from the secondary hæmorrhage, probably caused by Esmarch's bandage, which, expelling the blood from all the superficial vessels, allows the deeper to become engorged, and from the innocuousness of all manipulations for its arrest under the spray. The second case is also interesting from the danger to the flap through the purulent collection forming betwixt it and the bone, which was successfully combated by free drainage. This free drainage constitutes a most important part in all antiseptic proceedings.

Dr. Pratt intimates he cannot conclude the account of these

two cases without thanking Mr. Healy, the house-surgeon, for the unremitting attention he bestowed upon them, and for the scrupulous care he took with the antiseptic drainage and dressings, to which much of the success in both cases was, no doubt, owing.

MANCHESTER ROYAL INFIRMARY.

ANEURISM OF THE AXILLARY ARTERY; LIGATURE OF THE SUBCLAVIAN (LEFT); RECOVERY.

(Under the care of Mr. HARDIE.)

FOR the notes of this interesting case we are indebted to Mr. Frederick Wilson, resident dresser.

Thomas D——, aged forty-one, was admitted Jan. 14th, 1879. He had served for seven years in the Royal Marines, during which time he was employed in moving about heavy guns and chains. He left the service four years ago, and went to Manchester, commencing work as a bricklayer's labourer, which occupation he followed up to within a short time of his admission. Two years ago he felt pain in the left shoulder and down the arm. He became an out-patient at the infirmary, and was treated for some time as a case of chronic rheumatism. Subsequently he noticed a small tumour in the left armpit, and was made an in-patient. The tumour, being diagnosed an aneurism, was treated by electrolysis on four separate occasions; a certain amount of consolidation followed, and the man left the hospital after three months' residence. Shortly afterwards he resumed his occupation as a labourer, but the tumour began to increase in size again, and he was compelled to desist. He again entered the hospital, when electrolysis was once more tried, but with very little effect. He left the hospital for a few days, and was readmitted for operation. At this time the aneurism was about the size of a small orange, projecting forward beneath the pectoral muscles and slightly into the axilla, and pushing upwards the clavicle to some extent; it was rounded, and appeared, on examination, to contain a considerable amount of fibrinous deposit; distensile pulsation was well marked, as was also aneurismal bruit. There was slight œdema of the arm, the fingers were somewhat clubbed, and the patient complained of considerable pain down the arm.

On Jan. 15th the third part of the subclavian artery was exposed by the usual incision, in making which it was necessary to tie the external jugular vein and some small arteries. Owing to the displacement of the clavicle, the vessel lay at considerable depth, and at first some difficulty was experienced in finding it, through one of the cords of the brachial plexus being mistaken for the edge of the anterior scalenus muscle. On this mistake being discovered no further difficulty presented itself. The ligature, which was of silk, and previously dipped in carbolic acid, was passed round the artery and cut short (Mr. Hardie having found that ligatures thus treated in cases of amputation &c. which heal by adhesion give no further trouble). A drainage-tube was inserted, and the wound closed by three sutures. The operation was conducted antiseptically. The pulsation in the tumour and the radial artery was at once arrested.

On the 20th the patient was doing well; temperature 101°, pulse 102. The tumour felt solid; no pulsation could be felt in any of the arteries of the extremity.

On the 23rd the temperature was 100°, pulse 90. The sutures were removed. The wound was healed, except at the outer end where the drainage-tube lay. The tube was removed.

Four days later pulsation was detected in the radial artery.

On Feb. 15th the patient had no untoward symptoms; a sinus had remained leading from the outer extremity of the wound in the direction of the artery. To-day the ligature was found on the dressings, thirty-two days after the operation. Shortly after last report, the discharge having become purulent, the antiseptic dressings were omitted.

The sinus seemed unwilling to heal, and during the night of the 24th the patient was awakened by smart hæmorrhage from the wound. The blood did not seem to come per saltum, but to well up from the bottom of the sinus, and was arrested by filling the sinus with styptic lint and the application of pressure. On two other occasions—viz., on Feb. 28th and March 6th—there was a recurrence of similar hæmorrhage. After this the wound rapidly closed, and the patient was discharged on March 29th. The tumour had diminished to the size of a duck's egg; it was quite firm; the clavicle had nearly reached its normal position. The patient complained of no pain, and could execute all the movements of the shoulder-joint. The pulsation of the radial artery was quite distinct, though feebler than in the other arm.

LEEDS GENERAL INFIRMARY.

CASE OF DOUBLE GLAUCOMA; IRIDECTOMY; CURIOUS ESCAPE OF OPAQUE LENS MATTER.

(Under the care of Mr. OGLESBY.)

A MAN aged fifty-four, but looking considerably older, suffering from glaucoma of each eye, applied at the out-patient department for advice. He was a shoemaker by trade, but could not follow his occupation consequent upon increasing dimness of vision. It was evident, even from casual observation, that he was a hard alcohol drinker.

When first seen the eyeballs were very prominent, the pupils sluggish and over-dilated. Tension: Right eye +3; left eye +3½. Vision: Right eye, letters of No. 20; left eye, shadows. Ophthalmoscope: Right eye, media clear, slight but distinct cupping of disc; left eye, opaque lens. Iridectomy was performed on each eye.

Three days after the operation there was considerable disturbance in the left eye; it was much inflamed, there was intense pain, and the lens appeared swollen and much more opaque than before the operation. The right eye progressed satisfactorily, and vision improved rapidly.

After a stay in hospital of some weeks he was made an out-patient. Three weeks having elapsed he attended as an out-patient, and Mr. Oglesby was surprised to find the lens bulging into the anterior chamber. The pain the man suffered was certainly great. He was advised that the lens should be at once removed, but he would not consent. The following week he again attended, and made the following statement:—During the evening of the preceding Wednesday the left eye felt more than usually swollen and painful. The pain increased towards midnight, and then suddenly abated. At the same time he felt something under the lower eyelid. When next seen by Mr. Oglesby so marked an improvement had taken place that a minute examination was made. A distinct rupture was found in the sclerotic, immediately behind the sclero-corneal junction. Through this opening a portion of lens matter escaped. Tension, which previous to the escape of lens matter had been +3, was now reduced to +1½. As the patient complained of no pain, and as tension and redness were much reduced, it was decided not to remove the remaining portion of the lens.

For two weeks the eye remained quiescent; at the expiration of that time slight pain, accompanied with redness, supervened. These symptoms progressed rapidly, and when next seen the remaining portion of the lens, which had receded from the anterior chamber, was much swollen, and again bulging towards the posterior surface of the cornea. Its immediate removal was decided upon. Improvement was marked from the first. A return of some degree of vision is thought to be probable.

Mr. Oglesby, remarking on the case, called attention to the unusual circumstance of a portion of the lens making its way through the sclerotic. He pointed out that the whole of the lens was composed of soft material—a pathological fact worth noticing, because the general belief was that after forty years of age a cataractous lens is always hard. During the whole period which ensued between the patient leaving the hospital and the spontaneous escape of lens matter, pain had been excessive, so much so that the patient usually spent his night in pacing his bedroom floor.

BEQUESTS ETC. TO MEDICAL CHARITIES.—The Worcester Infirmary has received £100 under the will of Mr. W. Essington, of Bewdley, and a similar amount under that of Mr. E. Penrice, of Droitwich. Mr. Samuel Norris has bequeathed £100 each to the Devon and Exeter Hospital, and to the Exeter Dispensary. The Leicester Infirmary has received £100 under the will of Mr. E. B. Farnham. The Mercers' Company have given fifty guineas to the Chelsea Hospital for Women.

Reviews and Notices of Books.

A Text-book on Veterinary Obstetrics; including the Diseases and Accidents incidental to Pregnancy, Parturition, and Early Age in the Domesticated Animals. With 212 Illustrations. By GEORGE FLEMING, Veterinary Surgeon, 2nd Life Guards. Large 8vo, pp. 759. London: Baillière, Tindall, and Cox.

THIS is a remarkable book, whether it be considered with reference to its position in the veterinary literature of this country, or with reference to the manner in which the subject-matter is dealt with by the author. It would appear to be the first treatise on veterinary obstetrics published in the English language. Mr. Fleming, it is true, refers to a solitary work published at the beginning of the century on the parturition of the cow or extraction of the calf, but this was but a fragmentary contribution to the subject, which in the present work is treated in all its fulness. Under this curious dearth of special treatises (exclusion being made of contributions to veterinary journals) Mr. Fleming's work strikes the reader with astonishment that so rich a field should so long have remained uncultivated in this particular fashion. In systematising for the English reader the vast amount of information which exists upon veterinary obstetrics, Mr. Fleming has done a service of incalculable value, and he has produced a book which at once takes its place as the great classic on the subject. It is difficult to write without seeming exaggeration of the way in which this work has been executed. Every page impresses upon the reader the highest sense of the exceptional learning, consummate skill, and unwearied and conscientious painstaking of the author. It is rarely our good fortune to have to consider a work of so wide a scope so thoroughly and successfully completed. And it must be added that publisher, printer, and engraver have well seconded the efforts of the author, and the result is a volume which is an honour to the veterinary literature of this country. Moreover, the interest of the work is by no means limited to the veterinarian. It abounds with information of almost equal interest to medical practitioners, and it may be expected to find its place on their book-shelves side by side with the treatises on human obstetrics.

The work is divided into two principal sections; the first relating to natural parturition (*eutokia*), and the second to difficult parturition (*dystokia*). In the first section are treated of, in successive chapters, the anatomy of the pelvis and of the organs of generation; the phenomena of reproduction, fecundation, sterility, ovulation, and gestation; the hygiene of pregnant animals; the pathology of gestation; and normal parturition. In the second section, difficult parturition is exhaustively treated; the accidents incidental to parturition; and the various pathological conditions accompanying and following parturition.

From so wide a range of topics, all of which might present matter for observation, it is embarrassing to select one which, while meeting the reviewer's exigencies as to space, would serve to illustrate the nature of the work. The medical mind, however, naturally reverts to a subject on which, in this country, human medicine is now seeking aid from veterinary, and endeavours to see what help may be obtained from the pages of the book. Probably no subject could have been selected which so well exhibits its value and the excellence of the book. We refer to the suggestion made by Mr. W. H. Power, of the Medical Department of the Local Government Board, as a result of the inquiry he made not long ago into a localised outbreak of diphtheria in the north-west of the metropolis, that the infection might possibly have been derived from some unrecognised ailment of milk-kine conveyed to human beings through the agency of the milk. Mr. Power's investigation of this outbreak rendered it highly probable that the infection of diphtheria had been chiefly disseminated by milk derived from a particular source of supply, and that this infection could not have come from any human source. The question then arose whether it might not have had an animal origin, but among the animals which supplied the particular dairy from which the milk was derived there did not appear to have occurred, at any time within the period in which it was likely that the milk could have become infected, any affection other than the localised mammitis commonly known as *garget*, and this in a simple form. Mr. Power raised the question whether, under this common term, there might not be included a variety of forms of disease, one of which would possibly give a clue to the mysterious presumed infection of the milk. We may infer that Mr. Power had not at the time access to Mr. Fleming's newly published work, or he would probably have given greater definiteness to his suggestion. The chapter on mammitis or mastitis is a masterly and, to the time, exhaustive account of the various forms in which that affection shows itself in milk-kine and other animals. Among other forms, Mr. Fleming describes one due to putrid or septic infection, which has the most important bearing upon Mr. Power's suggestion, and which is not referred to by other English veterinary writers on the subject, so far as our experience goes. It is quite obvious, from Mr. Fleming's descriptions of this septic form of mammitis, that there is here a field for observation, with reference to the varieties of the disease, and the modes of its development and propagation, of the greatest importance with reference to our milk supply. It appears to be clear that the disease is infectious, and Mr. Fleming has some observations on the ordinary means of spread of the infection among milk-kine of immediate interest for medical officers of health and for officials engaged in the regulation of dairies and cowsheds.

This is one instance only of the great value of Mr. Fleming's work to the practitioner of medicine and the human pathologist, and it is matter for congratulation to find here, under such able guidance, another common standpoint for the two pathologies, veterinary and human.

Modern Medical Therapeutics. A Compendium of Recent Formulæ and Specific Therapeutical Directions. From the Practice of eminent contemporary Physicians—English, American, and Foreign. By GEORGE H. NAPHEYS, A.M., M.D., &c. Sixth Edition, enlarged and revised. London: Baillière, Tindall, and Cox.

THE present is the sixth edition of this work. It is an American form of Dr. Sydney Ringer's book, and yet different. The principal classification is a nosological one, and under the heads of the various diseases are found mentioned the principal remedies and the principal indications of treatment. To collocate such information with judgment and with completeness is a very great service to the practitioner, who in the emergencies of practice often wants to see at a glance the best plans of treatment, and the chief remedies. The fault of such books is that the selection of remedies is often made very fancifully, according to the author's own predilections, but in the present instance the selections are made with judgment, and are, on the whole, fairly complete. Still there are defects and omissions which show that the author's vigilant eye is sometimes not open. Important medicines are not mentioned, and valuable suggestions are overlooked. For example, under the head of scarlet fever no allusion is made to the cases fatal by early hyperpyrexia, the treatment of which was the subject of a paper a few years ago by Dr. Clifford Allbutt. Again, no mention is made of dilute nitric acid, one of the most useful therapeutical agents in chronic bronchitis, in whooping-cough, and in other diseases. Dr. Williamson's (of Ventnor) paper on atropine as a remedy for night-sweats is not men-

tioned, though the paper itself represented careful observation and a large experience. These are omissions which strike us in a book which seems well conceived and carefully executed.

The Student's Handbook of Forensic Medicine and Medical Police. By H. AUBREY HUSBAND, M.B., M.C., Lecturer on Medical Jurisprudence and Public Health in the Extra-Academical School, Edinburgh, &c. Third Edition. Edinburgh: E. and S. Livingstone. 1879.

ONLY two years have elapsed since the last edition of this book was published. It is not meant to supersede the larger and more exhaustive works on the subject. It is intended for students, and is for them very convenient. It attempts to cover the whole field of forensic medicine and medical police, including questions of public and private hygiene, climate, &c. Though the present edition exceeds the first in size by more than 200 pages, one expects to find important subjects somewhat cursorily treated. But it is surprising to find how little that is essential the author has omitted, and how much he has contrived to include. This edition will fully sustain the acceptableness of the work. There are a few literary defects in it, the correction of which will doubtless be one of the improvements of the next edition.

HEALTH OF LARGE ENGLISH TOWNS
IN THE THIRTY-FOURTH WEEK OF 1879.

THE English death-rate, judged by the Registrar-General's weekly mortality statistics, continues remarkably low. In twenty of the largest English towns, containing nearly a third of the entire population of England and Wales, 4953 births and 2560 deaths were registered last week. The births were 229 and the deaths so many as 810 below the average weekly numbers during 1878. The deaths showed a decline of 87 from the number returned in the previous week. The annual rate of mortality per 1000 persons living in these towns, which in the two previous weeks had been equal to 17·4 and 18·7, declined again last week to 18·1. During the eight past weeks of the current quarter ending on Saturday last the death-rate in these towns averaged only 17·8 per 1000, against 24·7, 20·9, and 25·4 in the corresponding periods of the three years 1876–7–8. The lowest death-rates in these twenty towns last week were 13·1 in Portsmouth, 14·1 in Birmingham, 14·6 in Hull, and 15·0 in Bradford. The rates in the other towns ranged upwards to 19·1 in London and Leicester, 19·6 in Leeds, 19·7 in Liverpool, and 20·5 in Salford. The deaths referred to the seven principal zymotic diseases in the twenty towns further rose last week to 548, of which 258 resulted from diarrhœa, 112 from scarlet fever, 64 from whooping-cough, and 63 from measles. The annual death-rate from these diseases averaged 3·9 per 1000 in the twenty towns, and ranged from 0·0 in Plymouth to 0·7 both in Newcastle-upon-Tyne and Hull, to 5·1 and 5·4 in London and Leicester. This zymotic death-rate, which was equal to 5·1 in London, did not average more than 2·7 in the nineteen large provincial towns, having an aggregate population slightly exceeding that of the metropolis. Each of the seven zymotic diseases was more fatal last week in London than in the aggregate of the provincial towns. The greatest proportional fatality of scarlet fever occurred in Leicester and Oldham. Diphtheria caused 13 deaths in London and its outer ring, whereas but 2 fatal cases were recorded in the nineteen provincial towns. Four more deaths from small-pox were returned in London, but not one in any of the nineteen other towns. The number of small-pox patients in the Metropolitan Asylum Hospitals, which had been 96 and 101 at the end of the two preceding weeks, further rose to 111 on Saturday last; 26 new cases of small-pox were admitted to these hospitals during last week, against 18, 20, and 35 in the three previous weeks.

Diarrhœa fatality, although still remarkably low for the season, continues to increase; the deaths referred to this disease in the twenty towns, which had been 86, 141, and 210 in the three preceding weeks, further rose to 258 last week; in the corresponding weeks of the three years 1876–7–8 the recorded fatal cases were, however, 756, 452, and 709 respectively. The largest proportional fatality of diarrhœa occurred last week in Leeds, London, and Leicester; and the annual death-rate from this disease, which was equal to 2·5 per 1000 in London, did not average more than 1·2 in the nineteen large provincial towns.

REPORT OF THE ENGLISH COMMISSIONERS IN LUNACY.

THE Thirty-third Report of the Commissioners in Lunacy for England and Wales is printed. The following is the summary of facts:—

"The total number in the asylums, &c., and as 'single patients' in private care, on the 1st of January last, was 47,650, of whom 4187 males and 3591 females were private patients, and 18,133 males and 21,739 females were paupers. The total admissions of the year 1878 were 15,102, but of these 1532, or 10·14 per cent., were transfers, and 1726, or 11·42 per cent., were re-admissions. The patients discharged and transferred were 8796, of whom 5332 are returned as 'recovered.' The deaths of the year were 4715, and in 2349 of these cases post-mortem examinations were made. The patients in county and borough asylums on the 1st January 1878 were 37,763 (17,116 males and 20,647 females); the admissions of the year were 11,604 (5807 males and 5797 females). The patients discharged from the above-named establishments, including those transferred to other asylums, were 6471 (2992 males and 3479 females), of whom 1827 males and 2420 females were returned as 'recovered.' The deaths of the year 1878 were 4025 (2253 males and 1772 females). As the result of these changes, the patients left in these public asylums on the 1st of January last were 38,871 (17,678 males and 21,193 females), being an increase on the numbers resident on the 1st January, 1878, of 552 males and 546 females. The daily average number resident in the county and borough asylums throughout the year 1878 was 38,586 (17,515 males and 21,071 females). The recoveries of the year, as compared with the admissions (from which the transfers have, for this calculation, been excluded), have been at the rate of 40·3 per cent. for both sexes, or 35·3 per cent. for the males, and 45·2 per cent. for the females. The mortality of the year in county and borough asylums has been 10·4 per cent. for both sexes, on the average daily number resident, or 12·8 per cent. amongst the males, and 8·4 per cent. amongst the females. These figures, both as regards the rate of recovery and of mortality, differ but slightly from the averages of the last 10 years."

THE LATE DR. VACY LYLE.

To the Editor of THE LANCET.

SIR,—It is but a matter of justice that all acquainted with our late *confrère* should take an opportunity of testifying to his great merit, energy, and ability in the various onerous posts that he was successively called to fill in South Africa. It was my privilege to meet him in Pretoria some twenty months ago, and was consulted by him as to the best way of inducing medical men from the mother-country to settle in the Transvaal. And here I may take the opportunity of saying to the readers of THE LANCET that, for men of our own cloth and in weak health, who do not care to struggle for existence in town or country practice at home, there is ample room for remunerative work in the genial climate south of the river Limpopo. Dr. Lyle was so fully impressed with this fact that he strongly urged me to induce medical men to emigrate to the Transvaal, and promised them through me, all the support that his name and position could give. I do not know who will be Dr. Lyle's successor; indeed, it will be difficult properly to fill his place; but of this I am sure, that if the Transvaal remains, as now, British territory, room and to spare exists for many medical men, who can happily combine sport with medicine and surgery, obtaining from the latter an ample sufficiency for all the necessaries as well as the comforts of life.

I am, Sir, your obedient servant,

Victoria-street, S.W., August 25th, 1879. HARRY LEACH.

THE LANCET.

LONDON: SATURDAY, AUGUST 30, 1879.

THE meeting of the British Association is an annual event of considerable interest to a large section of the community. Nothing, perhaps, can better illustrate the increasing interest taken in science and her proceedings than the full reports of these meetings that now appear in all the more important daily journals. And the Association itself has grown to considerable dimensions. It has done its best to "advance science" in its way, although it operates under disadvantages for the prosecution of serious work. That is best done in the laboratory and the museum, and the learned Society which receives the work and stamps it with its approbation is different in kind from the peripatetic band of scientific and unscientific holiday-makers who have been this year so warmly welcomed in Sheffield. One way in which the Association advances science is in the promulgation of scientific truths by the leaders of the meeting for the time being. In this way some really useful work is or ought to be accomplished—the aims, methods, and meanings of science set clearly before the public. As a rule the philosopher is mindful of his audience, and takes care not to deal with the more abstruse parts of his work, and so it comes to pass that the presidential address is regarded generally as the chief event of the week's proceedings, and it is looked forward to accordingly.

The position of the President is thus one of no small responsibility, and seeing how liable his words are to be misinterpreted, it behoves him to weigh them with deliberation before giving them utterance. Without at all wishing to imply that the eminent men who have hitherto held the office have not been deliberate in their expression of opinions, yet it cannot be denied that of late years these semi-popular scientific gatherings have been made use of to promulgate certain daring flights of imagination rather than the truths of assured scientific observation. And people not versed in the laws of science, unable clearly to discriminate between fact and hypothesis, gain therefrom one-sided and erroneous views. Some of the bold speculations which have thus been started have caused one to doubt whether Science, rejoicing in the freedom which she was formerly denied, had not overleapt the bounds of natural phenomena, and trenched on regions really outside her range. Let her keep to the knowable; there is work enough there for her to do. But when she seeks, by extending her limits, to generate scepticism and destroy faith, she does more than is required of her. Nay, more, if Science is destined (as we believe) to lead in the future, her leadership will be a tyranny, and subjection to her a bondage past endurance, if she holds out to her followers only the creed of the Nihilist. It is, happily, otherwise, and, if one may so read the signs of the times, the extravagances of science are becoming things of the past. She is recovering from the stimulating effects of the reaction of popular favour which replaced cold neglect and scorn, and is seeing more clearly that her mission is to establish and not to destroy—to aim at truth, but not to lose herself in fruitless speculations.

Nothing could have more plainly indicated this than Dr. ALLMAN'S address. Conceived in a truly scientific spirit, it was well adapted to the purpose it had in view. It demonstrated with a lucidity which carries conviction with it that there is a physical basis of life, that all living things are knit together in one bond by the possession of the primary substance—protoplasm,—the functions of which are the same whether the organism be plant or animal—the same, that is, subject to infinite modification from environment. Further, that the quality of protoplasm which of all others gives the highest evidence of life—that of irritability—is as strictly a property of the substance as any physical property we know of. This—and it is much—Dr. ALLMAN frankly and freely admitted, and people will not be startled or amazed at it, so well schooled have we been in scientific advancement during the past twenty years. Thus far he goes, but no farther. If irritability be a property of protoplasm analogous to the physical properties of the inorganic world, what is Thought? Is consciousness also a product or a physical property of cerebral cells? The cautious and true scientific spirit cannot affirm this to be the case. There is no help gained from analogy on this point, and science must halt here and confess herself powerless to solve the question. In the eloquent words of Dr. ALLMAN,—

"Whatever may be that mysterious bond which connects organisation with psychical endowments, the one grand fact—a fact of inestimable importance—stands out clear and freed from all obscurity and doubt, that from the first dawn of intelligence there is with every advance in organisation a corresponding advance in mind. Mind as well as body is thus travelling onwards through higher and still higher phases; the great law of evolution is shaping the destiny of our race; and though now we may at most but indicate some weak point in the generalisation which would refer consciousness as well as life to a common material source, who can say that in the far-off future there may not yet be evolved other and higher faculties from which light may stream in upon the darkness, and reveal to man the great mystery of thought?"

Such, indeed, should be the standpoint taken by modern science. The confession of inability to solve all the problems of life does not weaken her position or claims to attention and respect. It is better far than an arrogance based on vain speculations and strained analogies.

SINCE the publication of the first annual report of the Local Government Board, no report of that administrative body has been looked forward to with so much interest by persons concerned in sanitary matters as that (the eighth, 1878-79) which issued from the press as Parliament was upon the point of separating. In the previous annual report (the seventh, 1877-78) the Board had taken occasion to recapitulate the chief gains to public health administration which had been secured since its establishment, and that a new administrative departure was then possible and was about to be taken. A single central authority had been established and organised for superintending the administration of the laws relating to the public health, poor relief, local government, and local taxation; the entire country had been divided into sanitary districts, and a local

authority for sanitary purposes established for every district, so that no area is now without such an authority or has more than one; the sanitary law had been amended and reduced into methodical form for the guidance of the several sanitary authorities referred to; and, finally, these authorities had been supplied with a code of subsidiary regulations which, when adopted, would enable them to give full effect to the more general provisions of the law. The organisation of the Central Department, the establishment of Local Sanitary Authorities, the consolidation of the law, and the framing of bye-laws, were, in the opinion of the Board, "complete"; but there remained, according to the Board, and "for the present at least," the work and, so far as the Central Department was concerned, the obligation, "of encouraging, instructing, and guiding the local authorities in the discharge of their responsible duties."

It was with reference to this further administrative development and to the methods in which it was proposed to be effected, that the eighth report of the Local Government Board was eagerly anticipated. One of the gravest charges urged against the Central Department, which, as answerable for the initiation of the new sanitary organisation, must be held responsible for the manner in which it was effected, was that encouragement, instruction, and guidance did not go on concurrently with organisation. Itself a heterogeneous body, its heterogeneity was manifested in every step of its operations to the well-nigh inextricable confusion of local sanitary organisations. It is true that in one sense it constitutes a single central authority for public health and poor-law purposes, but in reality it is an ill-assorted combination of incongruous elements, of which the disruption may be hoped for in the near future. It is true that each district of the kingdom has its sanitary authority, but it is also true that the several sanitary authorities, under the incentive of the Central Authority, have been so inaptly organised that they present a not less incongruous spectacle than the Central Authority. It is true, further, that the sanitary law has been amended and codified; but, alas! the more important of the amendments have been enacted since the codification, and already the old evil of manifold sanitary laws is again experienced. Finally, it is true that sanitary authorities have been supplied with a code of subsidiary regulations to enable them to give effect to the more general provisions of the law, but even the great instructional excellence of these serves to bring out in more marked relief the defects to which we have referred. Such "completeness" as the Local Government Board would attribute to the foregoing recent sanitary administrative gains obviously refers rather to the principles they illustrate than to their application in practice, of which the crudity is too painfully apparent.

We had looked, then, to the report just issued for some explanation or indication of the mode in which the Local Government Board proposed to remove these crudities and to bring about a due co-ordination of principles and practice in sanitary administration throughout the kingdom. But no such light is vouchsafed. The Board, wise no doubt in its generation, carefully avoids any, even the most indirect, reference to its pedagogic aspirations of the previous year, and limits itself to the barest statements of the administrative work of the twelve months. And a most astonishing statement it is, whether on the poor-law or the public-health side. Covering the whole of the complicated fields of poor-relief and public-health administration, with the almost infinite details of local administration and taxation, dealing with subjects which involve on the one hand the regulation of street music and bicycles (!), and on the other hand questions of international hygiene of the highest importance, a proper co-ordination of the several sub-departments of the Board cannot be hoped for, and without such co-ordination the sanitary administration of the kingdom must remain, as at present, incoherent and defective. A mere glance over the report of the Board, or over its table of contents, will afford evidence of the necessity which exists for the divorce of public-health administration from poor-law administration and other branches of local government, and the establishment of a separate Ministry of Health, if justice is to be done the public-health requirements of the kingdom.

OPINIONS differ as to the expediency of commencing the session at a medical school with what is known as an "introductory." Those who object to the old-fashioned practice do so on the ground that it is not commonly productive of any pleasure, or perhaps much profit, to the hearer, however delightful the exercise may prove to the lecturer. We are indisposed to question the proposition that these inaugural services — which indeed they may fairly be called considering the sermon-like exordium with which the student is frequently regaled—are not altogether enjoyable. Meanwhile we must be excused for thinking it is the manner of performing the annual function rather than the act itself which is at fault. Lecturers seem to us too commonly to regard the address as an opportunity for preaching and making a parade of professional candour and counsel—in giving which form of "advice" medical men are not as a rule especially happy or at home.

The conventional "introductory" is a homily on morals and ethics singularly out of time and place, if the young man on the threshold of his curriculum is not to be disheartened with his work, and, likely enough, disgusted with his occupation at the outset. If the Dean of a College were to carpet young freshmen on the first day of their residence, and bestow a whole hour in a more or less prosy endeavour to convince them that they had been fools in "coming up," and stood the best possible chance of being "sent down" prematurely and disgraced, or would be turned out ruined for life, after infinite pains and efforts on their parts, at the end of their course in the schools; if he were to paint the difficulties of the work before them in hideous outline, and fill it with horrible shadows and the ugliest of colours; if he were to bemoan his own folly or ill-luck in having entered upon the walk of life to which it is his business to usher them; if he told them of troubles, disappointments, and final discomfiture, what sort of service would such a rating be likely to confer on the aspirant to university honours? Would an outpouring of this description be held to redound to the credit of the schools, or the dignity of the dolorous soul so delivering himself? Nevertheless this is very nearly the typical character of the "introductory" as administered to the budding consciousness of the majority of young medical students. Throw in a little technical

padding, a few scraps of poetry, a paraphrase of trite moral axioms, a cynical joke or two at the expense of the poor benighted pupil, whose sorrows all lie before him, and we have the conventional introductory; a tame and cheerless, if not repulsive, homily, from which only the scoffers who come to hear, but stay to laugh, or those who are wise and doze, can go away heart-whole, or with spirits unsaddened and undismayed. Than such exercises, however ably composed or eloquently delivered, a convivial entertainment in which the innocent tyro is regaled with scalding coffee and salt-buttered toast is incomparably better, and it is to be preferred at all costs and every sacrifice of *prestige* or literary distinction. The school that, mistrusting its power of providing a sensible and encouraging opening address, falls back on a tea-meeting, is to be commended, only the true reason of the oratorical abstinence might as well be confessed.

The ideal "introductory" is a very different matter. The student, standing as a stranger, if not faint-hearted and bewildered, in the presence of what must appear a stupendous and almost interminable undertaking, needs to be taken kindly by the hand of someone who has conquered all the difficulties of the way and earned the rewards of success. Such friendliness is at once appreciated and helpful. It is just as well that the lecturer should not be so old as to lie open to the suspicion of not knowing what he is talking about, owing to the change which has taken place in the tale of work awaiting the new pupil, and the altered character of the advanced examinations he will be required to undergo. The sort of homily that will really do the beginner service is one that—charitably assuming he has made a good choice, as he has taken his place in the lecture-room—modestly and seriously aims to advise him as to the manner in which it will be wise to order his life and work so as to deserve success in the vocation whereupon he has entered. We do not think the "introductory" offers a suitable occasion for moralising. To the medical student, especially the young man, perhaps for the first time thrown on the streets of the metropolis, with its wilderness of weary and illusory distractions, there can be no question that advice is necessary, but the counsel needed does not profitably fall into the shape of a sermon. If the junior members of Faculties would devote a few hours a week to looking up their pupils, helping them in their work, and guiding them in the choice of amusements, infinitely more real good would be accomplished than is likely to be gained by any homily. In short, the "Introductory" should be a concise, elegant, and interesting compendium of general counsel to the student, forming a sort of key to the work before him—something worth hearing and carrying away as a *vade mecum* for the study. That it is not impossible to make an address fulfil this high and useful purpose does not admit of question when we call to mind some of the addresses which have fallen from the lips of men long resting from their labours. How marvellously the value of each branch of science, and the correlation of the whole, stood out before the mind after listening to the "Introductories" delivered by worthies it would be ungracious to compare with contemporary orators! Rightly conducted and carried into effect, we believe the idea of giving an introductory address to students at the opening of each session is an excellent one, but, like most other *possibly* good and excellent works, it needs to be intelligently performed.

Annotations.

"Ne quid nimis."

SEASIDE DANGERS.

To seek health and to find disease is an experience sad enough, but by no means rare, and the case is still sadder when, as too often happens, the disease found is one which might have been prevented by the use of the knowledge which present sanitary science affords. The accident is one which is, at this season of the year, only too common. Our health resorts are now crowded with our mural population, and many of the health-seekers will, it may be with certainty predicted, meet there lethal influences more potent than those which make for health—influences which are preventable, which ought not to exist, and our tolerance of which will one day be looked back upon with wonder. Many of them exist in far greater intensity in continental towns, as the death-roll of many a family will testify; but it is not of those which we propose to speak to-day. The dangers met with abroad are for the most part recognised as one of the risks of foreign travel to be calculated upon and faced. But the dangers to health in many English seaside towns are scarcely less, although less, recognised, and those who shun known dangers abroad too often find that their risk at home, if unknown, is not inconsiderable.

The perils of disease at health resorts are especially of two kinds—those resulting from concealed infection, and from domestic and public insanitation. As soon as a child is convalescent from an infectious disease he is hurried off to the seaside, to any lodgings, where no questions are asked. But the law now restricts the freedom of spreading disease in this way, and the danger from this source is slighter than formerly, and less than that which arises from the practice (difficult to arrest) of sending unaffected members of an affected family off to the seaside as soon as contagious disease breaks out. A child (as in a case which came under our notice not long ago) is taken ill with a sore-throat of suspicious character. Another child is at once sent off to the seaside. The day after his arrival he is taken ill with diphtheria, and other children with whom he played after the symptoms of the disease commenced, are also seized with the disease. Every seaside practitioner is familiar with instances of this kind in regard to scarlet fever, measles, diphtheria, and other diseases. The cases which occur are carefully concealed, and the disease spreads, especially if it be the "season," when lodging-house keepers have to secure their harvest, and the danger of extension is greatest. Not long ago family after family went down to one of our largest seaside towns, to be infected with scarlet fever, the existence of which at the place was carefully concealed. It was unknown until attention was called to it in our columns. The only remedy for this danger is the compulsory registration of infectious disease, and the supervision of infected houses by a competent authority. The registers kept should be published weekly, so that the public should know what health resorts are free from infection, and in which there is danger. No doubt such a measure would be highly unpopular with the lodging-house keepers, on whom it might entail considerable loss, but it is urgently needed in the interests of the public. If class legislation is to be deprecated, not less is non-legislation for the public good to be condemned because the interests of a class might thereby be imperilled.

The second source of danger to health-seekers arises from

the deficient sanitary arrangements of many of the watering-places, and from this danger very few resorts are altogether free. The problem of the drainage of towns upon the coast, apparently so simple, is really most difficult from its very simplicity. To carry the sewage to the nearest and most convenient point at which it can pass into the sea is so easy a solution of the problem that it has commonly been adopted, and the sewage is carried to what is also the most frequented resort for bathers and loungers. In the case of the sea this is bad enough; at low water the air for half a mile to leeward is unfit for respiration. In the case of lakes it is still worse; the slowly moving water becomes charged with sewage, and many are the cases of illness due to boating in the neighbourhood of the sewage outfall. Even where sewage is carried to a distance from the town before being poured into the sea, little care has often been taken to prevent nuisances in the operation of the method. Take, for instance, the sewer which conveys the drainage from Brighton towards Newhaven, and which runs parallel and near to the Rottingdean-road. It is ventilated at intervals by large openings, covered by chimneys, which, instead of being high enough to carry the sewer-gas to a safe elevation, are so low that those who walk along the adjacent road have to pass at each opening through a hundred yards of air impregnated with sewer-gas whenever the wind is off the sea. In many towns, moreover, the drains which carry the sewage into the sea are unprotected from tidal influences, and as the tide rises, the pressure in the sewer is correspondingly increased, and releases itself at all available places, for the most part into the houses, where opportunities for relief abound. The sanitary construction of lodging-houses is for the most part of the worst description. Either old and ill-constructed houses, or new edifices run up at the smallest cost and in the most careless manner, most of them possess every defect of sanitary arrangement. The waterclosets are of the commonest description, the traps often defective, and frequently permitting escape of sewer-gas into the houses. Probably in not one lodging-house in a thousand, and in very few hotels, is there any ventilation for the soil-pipes except into the water-closets, or, perhaps, by the overflow-pipes of the cisterns, from which the drinking water is taken. These dangers are by no means imaginary. Few practitioners are without abundant experience of filth diseases contracted at the seaside—typhoid fever, diphtheria, low forms of sore-throat, and diarrhœa. Several cases of typhoid fever came last year under our notice, which were contracted at one of the most popular of our watering-places. It is, indeed, remarkable that disease from this cause is not more frequent than it is, and no doubt the explanation is the amount of time spent by the visitors in the open air. In a wet season like the present, when children have to spend much time in-doors, the danger is much greater than it is in fine weather.

It is easier to see the evil than to provide a remedy. Little can be hoped from the influence of public opinion and public demand. The middle classes, by a right instinct, go to the sea for their annual holiday. They are powerless to protect themselves against danger, for an unskilled cursory examination does not reveal the existence of the evils which, on residence, are soon discovered. It is probable that the only efficient way of securing the public against the above-named evils is the legislative prescription of certain conditions to be observed in all drainage arrangements in watering places, and for the periodical inspection of the sanitary state of all lodging-houses, and the enforced repair of all defects and deficiencies. Until this is done something might be effected by individuals. We are sure that lodging-house keepers would find an annual certificate from the medical officer of health that their houses are in a perfect approved sanitary condition a cheap investment, for there are few persons who would mind paying a trifle more rent for the assurance that they were free from the danger of such scourges as the diseases which result from unhealthy surroundings.

COLOUR-BLINDNESS.

NOTHING would be more unwelcome than an abatement of the public interest in the occurrence of colour-blindness among the *employés* of railway companies, captains, pilots, sailors, and others who have to do with coloured signals; but caution is necessary lest zeal outrun prudence. In the eagerness to weed out all persons afflicted with any form of colour-blindness there is a risk of rejecting some otherwise eligible candidates merely because they are unable to *name* the particular colours employed as tests. This is not colour-blindness in the proper sense of the term, and need not, of itself, be a disqualification. For all practical purposes the defect may be said to consist in either a total inability to *recognise* certain colours, or in an extreme slowness or uncertainty in discriminating colours that are essentially different. Failing to name a colour may merely signify want of acquaintance or familiarity with colour epithets. Many persons who call all shades of a colour, and even widely different colours, by the same name, when asked to sort out coloured objects, are found to possess an acute colour-sense. They have only a deficient vocabulary. There is another not uncommon form of false colour-blindness which has been lately brought into prominence through a correspondence in *The Times*. From want of proper training of the retinal elements for colour impressions an individual may, even with healthy eyes, be unable, at first, to distinguish different colours. Like a person who has not learned the alphabet, he fails to recognise the special peculiarities and distinguishing marks of the objects under examination; or, to use Dr. Stone's simile, he is like a person with a "bad ear" for music; the special sense-organ is untrained. In the absence of organical defect, this condition is removable by education and practice. It is, however, very desirable that the education and practice should precede, not follow, the instalment into responsible posts, the proper discharge of which involves the safety of life and property. The public mind cannot be satisfied until it is assured that all applicants for such posts are submitted to strict examination by competent authorities.

GOOD HEALTH AND BAD TIMES IN GLASGOW.

THE profound calamity which overtook Glasgow last year gives unwonted interest to its social and vital statistics. It is very remarkable that although this disaster was followed by a very severe winter, the mortality of Glasgow was less than the average. According to tables recently presented by Dr. Russell to the Committee of Health, in January, which was cold and dry beyond precedent, the general death-rate was less than the average by 1 death in 1000 living. Still more strikingly, the death-rate of children below five was less than the average by 19 deaths in the 1000 living. The proportion of deaths under five years to the total deaths was lower than the average by 3 per cent. February was extremely cold and dry. The general death-rate was lower than the average by 4 per 1000. The death-rate of children under five years of age was lower than any on record, and 22 per 1000 lower than the average. March was cold and wet. The mean temperature was below any on record for the same month in ten years. The general death-rate was much lower than in any year but one of the ten, and lower than the average by 7 per 1000. The average death-rate of Glasgow in the first quarter for ten years is 32 per 1000; for 1879 it is 28. Of children under five years of age, the death-rate on the average of ten years was 104, in the first quarter of this year it was only 81. These are really very curious

facts, for formulating which we are much indebted to Dr. Russell. We should have been still more so if he had given us his explanation of them. They are the more remarkable as they were confined to Glasgow, the rest of Scotland having fully the ordinary rate of mortality. The reality of the commercial depression in Glasgow is shown by the fact that 8 per cent. of habitable houses are standing empty, and that whereas in 1876-7 authority was granted for the erection of 5832 houses, authority was granted in 1878-9 for the erection of only 399. These facts, especially in juxtaposition, are very noteworthy, increase of municipal health coinciding with decrease of prosperity. The explanation is, doubtless, to be found partly in the light mortality from zymotic disease. But this itself needs explanation. It is some set off against a great financial disaster to see that, if not involving advantage to the public health, it coincides with it. But it is quite possible that the connexion is more than a coincidence, and that diminished means are in some way favourable to health.

THE MEDICAL OFFICERS OF IRISH GAOLS.

AFTER considerable delay the medical officers of the Irish gaols are to be congratulated on having at last learned the course the Government intends to adopt towards them with regard to their salaries, a general scale of which, approved by the Lords Commissioners of Her Majesty's Treasury, has recently been published by order of Parliament. For some years past, as we have pointed out on many previous occasions, the medical officers of the Irish gaols have been suffering no slight injustice. By an old law the surgeons of each county infirmary in Ireland were bound to give medical attendance to the county prison, if situate within five miles from the infirmary. For this they received £100 a year from the Treasury, and £100 from their respective counties. About forty years ago the Treasury £100 was stopped, although the duties of the medical officers have been considerably augmented. It was, however, understood that when the Prisons Act of 1877 was passed, Government would take the opportunity of redressing the grievance. The general scale of salaries just published is therefore an attempt to redeem this understanding. Whether the salaries named in the present scale are to be considered an adequate remuneration for the responsible duties performed by the medical officers of the gaols in question, we cannot pretend to decide without a knowledge of the size of the prison and the number of the prisoners in each case. Certainly a scale of salaries averaging about £60 a year for the medical officer of each prison does not seem a very liberal arrangement. There is one point, however, in the proposed scheme that appears highly objectionable and derogatory to the position of these officers—that is, making the allowance in each case conditional on the medical officer compounding the medicines for the prisoners. It is probable that this clause will deter many of the best men from coming forward for these appointments—a matter of regret when we reflect that the satisfactory working of the Prisons Act and the maintenance of a rigid system of discipline can only be safely and thoroughly carried out under the supervision of an intelligent and well-educated medical officer. Few men of high position in the profession will, we think, care to come forward for appointments to which the drudgery of compounding medicines is attached, and the appointments will consequently be sought by men of lower grade. The prisoner will thus be deprived of the only safeguard at present afforded him against the possibility of the regulations pressing injuriously on him in the matter of health. Unless, therefore, we have an intelligent responsible body of men for our gaol surgeons, breakdowns under the working of the Prisons Act are sure to be of frequent occurrence; and painful scandals, of which during the past twelvemonth we have had instances, will result, which will shake public confidence in the general working of the system, leading to a reaction in favour of greater leniency to the prisoner—a reaction we would deplore, for we consider the present system of prison discipline, if carried out under the constant surveillance of an intelligent medical officer, on the whole likely to work fairly well when certain modifications in some of the dietaries have been effected. But for the efficient working of the system it is absolutely necessary that the medical officers should be selected from men of the higher grades of the profession.

MEDICAL REGISTRATION FOR THE HALF-YEAR.

FROM the half-yearly Medical Register just published it appears that 384 persons have been added to the Medical Register from Jan. 1st to July 1st, 1879. The registrar gives several interesting tables showing the several single qualifications, as also the combinations of multiple qualifications. Of the single qualifications registered, the largest number is that of the English College of Surgeons. Seventy persons registered this qualification separately. The next largest is that of the Apothecaries of London, 39. The double qualification which has most registrations in the half-year is that of the two Edinburgh Colleges, 51. Next to these, the association of the English College of Surgeons and the Apothecaries, in 42 cases. Of 384 registrations, 160, or 41·7 per cent., were of single qualifications; 224, or 58·3 per cent., multiple.

A very interesting table (H) is given, showing the number and percentage of persons registered with one, two, or more qualifications in the Medical Register for 1879. Thus of 22,564 persons, 19·33 per cent. have one qualification, 57·04 have two qualifications, 19·35 three qualifications, 3·59 four qualifications, 0·63 five qualifications, 0·05 six qualifications, 0·01 seven qualifications. Two persons have respectively seven qualifications.

PORT SANITARY REGULATIONS AND QUARANTINE IN THE UNITED STATES.

THE *London Gazette* of the 16th inst. contained a copy of certain rules and regulations in reference to quarantine prepared by the National Board of Health of the United States. These rules, which are too long to be reproduced in these columns, make an attempt, and, as we think, a fairly successful one, to hit the *juste milieu* between the irrational systems of quarantine as still carried out at most Mediterranean ports and the very liberal port sanitary clauses of our own Public Health Act, that incline perhaps somewhat too much to commercial at the expense of sanitary interests. Meanwhile all who know anything about such matters will, by a very cursory perusal of this Act, see that its provisions, if carried out in their entirety, must be somewhat costly to the parties concerned, and specially to the United States Government. They indicate the appointment and maintenance of a small but specially intelligent sanitary staff at all chief foreign ports (foreign, we mean, as regards the States), the officers comprising it being fully acquainted with all health matters in the port at which they reside, so as to be competent to give a complete and independent report to the authorities at Washington about the sanitary condition of the port, as well as the particular state of all vessels that sail thence to American destinations. Indeed, the terms of the Act seem to imply the existence of a medical officer on the staff of every important United States consulate, both in the United Kingdom and elsewhere. The Act as it exists is a great credit to a very energetic Government, and we wish it all possible success. But there are some few omissions as well as commissions that, in our opinion, require rectification. For example, we find in the schedule of explanations that "Asiatic cholera, yellow

fever, plague, small-pox, and typhus fever [only], are recognised as contagious and infectious diseases." Would it not be wise to include at all events scarlatina, measles, and diphtheria, having regard to the fact that among emigrants' children these maladies are often rife; and the terrible havoc that they have sometimes caused afloat is so fresh in the minds of most of us as to need no special particularisation. It is true that the average passage of an emigrant steamship from England to New York or Boston is but from ten to twelve days; but a great deal of mischief may be done even in that short space of time among a number of youngsters amidst whom are scattered the seeds of any epidemic disease. And so we counsel transatlantic legislators to add diphtheria, scarlatina, and measles to the list of quarantinable diseases enumerated in their very excellent Act. And it will assuredly be the duty of all customs and port sanitary authorities in the United Kingdom to assist the practical working of the Act in London and the outports by all means in their power.

THE SWEAT-NERVES OF THE FACE.

THE innervation of the sudiporal glands has recently been studied by MM. Vulpian and Raymond. The observations of many investigators concur in demonstrating that, in the cat, the division of the ganglionic chain of the abdominal sympathetic or of the sciatic nerve prevents any general excitant of perspiration from acting on the limb operated on, while sweat may be excited by stimulation of the peripheral end of the divided nerve. It has been shown also that similar results may be obtained in the fore limbs by division of the upper part of the thoracic sympathetic, or of the brachial nerves. But Dupuy (of Alfort) had observed that extirpation of the superior cervical ganglion in the horse caused redness of the conjunctiva, a considerable elevation of temperature at the base of the ear, and the forehead, and sweating on the ears, the forehead, and the neck. Claude Bernard observed similar effects from division of the cervical sympathetic on one side, and found that if the peripheral end of the divided cord was stimulated, the perspiration ceased, the vessels became contracted, and the temperature fell. Can we admit that the paralysis of the sympathetic fibres for the sudiporal glands can lead to an over-activity of these glands of the face of the horse, when it arrests the action of those of the paw of the cat, and that the electrical excitation of these fibres arrests the secretion in the one case, and produces it in the other? To decide the question, MM. Vulpian and Raymond have repeated the experiments of Dupuy and Bernard, with a view of ascertaining whether there is not some point of the nervous system of the horse at which the same results can be obtained as in the cat. In these experiments they found that the section of the cervical sympathetic cord is followed, as Bernard stated, by an abundant production of sweat upon the different parts of the head and face, but they did not find that faradisation of the upper end of the cord caused constantly an arrest of the sweating. It only did so when it produced a considerable contraction of the vessels. It seems therefore probable that this cord contains but few fibres which excite the secretion of sweat, if it contains any, and the variations in its physiological condition act upon the sweat-glands only in a more or less indirect manner, by the modifications of the capillary circulation, which, in their turn, influence the activity of the anatomical elements. The sweat-exciting nerves of the skin of the face are derived either from the sympathetic fibres which accompany the vertebral artery, and are ultimately derived from the superior cervical ganglion, or else they come from portions of the sympathetic which proceed from the medulla oblongata and pons Varolii. These fibres accompany the various cutaneous nerves; they are, perhaps, numerous in the cutaneous branches of the fifth, and experiment shows that the facial nerve contains at least some. M. Strauss has shown that when the facial nerve in man is paralysed and has lost its irritability, if pilocarpine is injected, the sweat appears later on that side of the face than upon the other.

THE LONDON WATER-SUPPLY.

DR. WM. FARR and Mr. Edwin Chadwick have prepared a report on the Metropolitan Water-supply for the Council of the National Association for the Promotion of Social Science, in which they set forth the defects of the present system, and frame an estimate of the cost of purchasing the rights of the present water companies, and instituting a better and more economical supply. The defects of the present system, may be thus summarised:—First, in the defective conditions of intermittent supply and delivery by stagnant detentions in cisterns and butts in close places, where the water is de-aerated of the air at the source, and absorbs the gases of putrefaction of cesspools, bad drains, sewers of deposit, and of middensteads, and is besides elevated in temperature. This renders the water repulsive and unpotable, and, as a general fact, water so delivered is not habitually drunk as it might be by the wage classes of the community. The inference to be drawn from this is that they drink beer, and thus the bad water-supply and storage becomes a direct incentive to drunkenness. Secondly, in the present condition of delivery there is a waste of upwards of three-fifths of all the water pumped into the metropolis. Lastly, the conditions of the distribution on the intermittent system for a trading profit, and not as a public service, obstruct the due provision by means of hydrants under the charge of the police for the prompt extinction of fires, occasioning the nearly threefold greater losses of life and property in the metropolis than in such large provincial cities as Manchester, Liverpool, and Glasgow, where improved systems on a public footing have long obtained. By the purchase of the companies an economy of upwards of £100,000 per annum in the expenses of administration, derivable from consolidated management on a public footing, would be effected, and from this it is estimated the requisite house services might be altered to receive the constant supply, and the streets hydranted completely for protection against fire and cleansing the streets, without any additional charge to the ratepayers. The report concludes by urging the purchase without further delay. In 1850 the works might have been purchased for £6,000,000. An improved system of extended distributory apparatus for the whole of the metropolis in its present magnitude is estimated at £8,000,000; but the present cost of the undertaking is estimated at £26,000,000; and at the same rate of progress it will in another decade amount to £37,000,000.

DAMP SHEETS.

AMONG the dangers which beset the sojourners at the seaside is the really great and sometimes even deadly peril of sleeping in damp sheets. It is at all times, and under the most propitious circumstances, difficult to persuade servants at home that the "airing" of linen and clothes is not to be accomplished by simply hanging them on a clothes-horse near a fire. Unless each article is unfolded and its position changed until all the moisture has been driven out of it, the process of drying is not effected. Even if vapour rises from one part it is reabsorbed by another. As a matter of fact, heavy articles, such as sheets, are scarcely ever thoroughly dried, and when delicate persons, perhaps fatigued by a journey, seek rest in a bed made with them, they incur the greatest risk of rheumatism and congestion of the larger organs, which may end in mischief it is impossible to repair. It is, of course, impracticable to induce lodging-house keepers to bestow thought on such matters. They profess carefulness, and do nothing. They are neither

better nor worse than the servants at home, but they cannot be watched, and so neglect their duty with impunity. The only wise course is to insist on the sheets for a bed being brought up warm, and appoint some trustworthy person, or take the trouble, to see that this is done. Failing a precaution of this nature, it is better to remove the sheets from the bed and sleep in the blankets until the fact that they are thoroughly dry can be finally ascertained. This may seem a small matter, but it is often one of the greatest moment to health, and cannot be too repeatedly pressed on the attention of visitors to strange places.

THE HEALTH OF CALCUTTA.

SURGEON-MAJOR PAYNE'S last received quarterly report of the health of Calcutta—that for the second quarter of the present year—is chiefly occupied with a discussion of the recurrence of epidemic small-pox among the population with reference to vaccination. The disease appears to assume an epidemic form in Calcutta every fourth or fifth year; it became epidemic among the population in the course of 1878, and still prevailed in the March and June quarters of the present year. The present epidemic is more severe than any which has occurred since 1865, and the extent of this prevalence seems to be closely connected with the state of vaccination of the population. Vaccination is not compulsory in Calcutta; but Dr. Payne argues from the details he gives that it should be so. He further urges that in Calcutta there is no reason why vaccination should be suspended during the hot weather and the rains, and that it should be carried on without interruption throughout the year.

We have among other papers relating to the health of the city an elaborate minute on one of Dr. Payne's reports for 1878 by Mr. Rajendralala Mitra (one of the municipality). Among other matters this gentleman discusses Dr. Payne's views on the influence of water, and especially the influence of tank-water, upon the development of cholera in the city, from the point of view of the Sanitary Commissioner with the Government of India and the Army Sanitary Commission. The discussion adds nothing to our knowledge of the subject; but it is instructive from the mode in which it is pursued, and especially as an illustration of the vicious method of argument which pervade so much of the public-health literature that emanates from Calcutta.

LOCAL TEMPERATURE.

M. PETER has communicated to the Société Clinique of Paris, of which he is president, some interesting observations on local changes of temperature in abdominal diseases, in continuation with those on the changes of temperature in cerebral disease. A patient presented the symptoms of dyspepsia with progressive emaciation. The cachexia was so great as to suggest the existence of cancer of the stomach, but there was neither vomiting nor tumour. The epigastric temperature was found to be 99·5°, while the axillary temperature, taken with care, was only 98°. The patient died, and at the autopsy a cancerous tumour was found, which had invaded the posterior wall of the stomach and part of the greater curvature, the cardiac and pyloric portions being unaffected. This local elevation of temperature is said not to be found in cases of simple dyspepsia. In another case observed by M. Peter the local temperature was also raised. At the Société de Biologie, however, M. Onimus stated that he had seen, with M. Peter, a dyspeptic in whom there was an increase of local temperature compared with that in the axilla. A paper has been communicated to that Society by M. Leven, in which he states that the temperature in the gastric region is not the same on the right and on the left side, the difference being from ·1° to 1° C., and it varies at different times in the day. Fasting, in the morning, it was on the right side 35·7°, on the left 35·9°, and in the axilla 35·6°. This early morning is the highest, and to it M. Leven ascribes the anorexia of dyspeptics at breakfast-time, but it would be interesting to know whether the observations were not taken before rising, when the surface-heat is kept in by the bedclothes. Towards midday the temperature falls, and is the lowest at noon, when it is 34·9° C. on the left and 35·1° on the right. An hour after food it is 35·2° on the left and unchanged on the right, but an hour later it rises 1·4° on the right side, although the axillary temperature falls. Four hours after the meal the temperature begins to fall. The peripheral temperature begins to rise three hours after the meal. In the dyspeptic these variations in temperature are not the same. The temperature is 1° to 2° C. above the normal 36° to 37°, and in dilatation and cancer the temperature is 37° on the right and 36·5° on the left. These facts are not quite in accordance with the statements of M. Peter which we have given above. The number of cases and observations on which M. Leven's conclusions are based is not given. They have a somewhat suspicious precision, considering that they were made with an ordinary thermometer covered with tow.

FRIENDLY SOCIETY INSURANCE IN GLASGOW.

WITH regard to statistics bearing upon the proportion of insurance in friendly societies, Dr. Russell, the medical officer of health for the city of Glasgow, makes a valuable contribution in his report for 1878, which naturally creates a desire for similar information relating to some of the large English towns. During last year no less than 5622, or 40 per cent., of the 14,055 persons whose deaths were registered in Glasgow, were registered in friendly societies. Among legitimate infants under one year of age the proportion insured was 23 per cent.; whereas only 6 per cent. of the illegitimate infants under one year were insured. Between one and five years 52 per cent. of the legitimate, and 25½ per cent. of the illegitimate children were insured. Of children and adults aged upwards of five years, the proportion insured averaged 44 per cent. Dr. Russell points out that the largest proportion of insured deaths does not take place in those parts of Glasgow where the highest class of the artisan population resides in improved and more recently built houses, but in those parts inhabited to a great extent by labourers living in a very inferior class of tenements. Few will disagree with Dr. Russell when he says: "The very large proportion of children of tender years who are enrolled in these societies can hardly be regarded with perfect comfort in view of the high rate of child mortality." It is an undoubted fact, that the deaths of a large proportion of the insured children bring to their parents a sum of money in excess of the necessities for burial. There is good ground for believing that the proportion of insurance in friendly societies is far smaller in England than in Scotland. Dr. Russell's figures, however, make it especially desirable that we should have trustworthy official information, showing the extent of such insurance in England, especially among infants and young children.

ZYMOTIC DISEASE IN BRISTOL.

DURING recent weeks, although the general death-rate has been considerably below the average in Bristol as well as in most of the other large English towns, the proportional fatality of the principal zymotic diseases has shown a marked excess. Whooping-cough, measles, scarlet fever, and diarrhœa have each caused an increased mortality, which has augmented the average fatality in the other large English towns dealt with in the Registrar-General's Weekly Return. With regard to the fatality of zymotic disease in Bristol, Mr. David Davis, the medical officer of health, published some remarks in his return for the quarter ending June, which are worthy of note. He appears to have come to the

conclusion that the proportional fatality of measles and whooping-cough affords a "very reliable index of the social and moral condition" of the population of different portions of the city, especially as regards the care taken of the children, who are naturally the chief contributors to the zymotic rates of mortality. He adds:—"I have no means at my command to lessen this unnecessary mortality from measles and whooping-cough, and I am not aware that your authority can move in the matter; I fain hope that these figures may meet the eye of some philanthropist who may see a way to dam at the fountain-head this wasteful overflow of human life." The assertion that zymotic fatality is due to social causes, and the exclusion of all reference to what is usually understood by sanitary condition, is to be regretted, but might be expected from a medical officer of health who refuses to see that any benefit would result from the application of the Artisans' Dwellings Act to some of those very portions of Bristol which invariably suffer most severely from this zymotic fatality. With reference to an increase of fatal cases of scarlet fever, Mr. Davis expresses his intention to follow the "preventive path approved by the best authorities," but "as one time of periodical immunity has expired, and a large number of children under five years of age, who are chiefly subject to it, have come amongst us since our last epidemic, I am not sanguine of the result." Bristol possesses good hospital accommodation for infectious diseases, and we are told that the sanitary authority have never objected to any expenses incurred in preventive measures. Surely, with such advantages, there is no necessity for taking too gloomy a view of zymotic fatality in Bristol. It is true that Bristol has in past years suffered excessively from scarlet fever, especially in 1870 and 1875–6, which were epidemic years; but with improved sanitary precautions and organisation and improvement in the housing of the poorest classes, future epidemics of scarlet fever ought never again to cause so great a mortality as prevailed in 1870.

THE DISSEMINATION OF SMALL-POX.

THE *Surrey Advertiser* states that the surgeon of the Kingston workhouse has made a report on the curious facilities existing in that institution for the spread of small-pox among the inmates. It would appear that the relation of the infectious fever wards to the body of the house is such that whenever a case of small-pox is admitted into the former the disease "invariably spreads to some two or three unfortunate inmates of the workhouse or its infirmaries; and to one of these at least the attack is sure to prove fatal." Our contemporary not unreasonably thinks this state of things highly unsatisfactory, not only in the interest of the paupers, but also in the interest of the ratepayers, and hopes that the House Committee will deal with the question in a bold and complete manner.

THE NAVY.

SEVERAL officers and men have fallen victims to yellow fever on H.M.S. *Boxer*, now stationed in the West Indies. Among the former are Senior Lieutenant Arden, and Paymaster Bell. Our "service" contemporaries think that the system of frequent exchange on foreign stations is unwise, as leading, in a sanitary sense, to unhappy results. We fail to see this, but as something more is to be said on the subject, "the reason why" can be waited for and subsequently discussed.

PROPAGATION OF ENTERIC FEVER BY MILK.

PROFESSOR CAMERON has added another instance to the already numerous examples of the propagation of enteric fever by the agency of infected milk. It is in the form of a report of an outbreak of the disease in a suburb of Dublin, which he investigated with great minuteness, and traced to the infection of a particular supply of milk from the occurrence of enteric fever among members of the dairyman's household, including the dairyman himself. A special feature of interest in the report is that the professor has felt himself in a position to subject to mathematical proof the conclusion that the milk from the infected dairy caused the outbreak. This he does, and we commend his proof to arithmeticians, and his report, which will become a classic on the subject, to our readers generally.

THE Bishop Auckland Guardians, as rural sanitary authority for the district, have reduced the salaries of their medical officers of health, three in number. These gentlemen held their offices each at £50 a year, half of this sum being refunded to the guardians by the Local Government Board. The salaries of two have been lowered to £40; the salary of the third to £30. But the guardians, in their economical effort, have overshot their mark. The Local Government Board has refused to assent to the reduction, and has withdrawn its contribution, observing that, "looking at the circumstances of the district, and the important nature of the duties devolving upon the medical officers, it would not at present be prepared to allow repayment from the Parliamentary grant on account of the proposed salaries." Thus, to save £40, the guardians have ingeniously contrived to mulct themselves of £35 a year.

LAST Saturday Mr. Lawson Tait performed cholecystotomy at the Birmingham Hospital for Women, in a case of dropsy of the gall-bladder, due to impacted gall-stones. The patient is making an uninterrupted recovery.

THE METROPOLITAN POLICE REPORT.

THE annual report of the Chief Commissioner of Police for the metropolis is always full of interest, affording, as it does, an insight into many of the great social problems of the day, and a perusal of it shows how incessant must be the watchfulness that not only controls the vicious elements of the population, but also regulates its wholesome activities. This year the metropolitan police celebrate their jubilee, the force having been established in the year 1829. When first established, the metropolitan population was about a million and a half in number, and the strength of the police force was fixed at 3341. Now, with an estimated population of four millions and a half, the authorised strength of the police is 10,477. We regret to find during the past year there has been a considerable increase in crime and drunkenness. The number of persons arrested for various offences was more than 10,000 over the average of 1873–74–75. The total number of offences against property, including burglary, house-breaking, robbery, &c., was 14,409. Statistics show that the number of these offences against property remained almost stationary from 1871 to 1875, but have been gradually increasing since. It is encouraging, however, to find that practically the number of serious offences against property in 1878 is about the same as in 1869, whilst in the decennium the population has increased over a million, which is equivalent to a decrease in that period of this form of crime of 21·40 per cent. The increase which has occurred during the later years of the decennium, as compared with the earlier years, must be attributed in great measure to the commercial depression, and the frequent strikes, throwing large numbers of the lower grades of the population out of regular employment, and exposing them to temptation. The Chief Commissioner again draws attention to the carelessness of householders in leaving doors and windows insecurely fastened at night. The increase in

number of street accidents of late years is most deplorable, and still more so is the apathy which rests content with the present condition of affairs. In 1869 the number of street accidents amounted to 1703; last year the number had risen to 3032; of these 124 persons were actually killed. The construction of subways at the most crowded points of our thoroughfares, an intelligent regulation of the traffic, and the restriction of the passing of heavy vans to certain hours of the day need enforcement. The supervision of the common lodging-houses seems to be efficiently conducted by the police; it is satisfactory to note a decrease in the number of infectious diseases that have occurred in these houses, which show as 55, against 96 of last year. The disinfecting process carried out seems also to be good, as it appears that very seldom a second case of fever occurs in the same house. The Chief Commissioner acknowledges the great kindness and consideration shown by members of our profession with whom the officers have been brought in contact in the performance of the duties connected with the Common Lodging-house Act.

THE BRITISH ASSOCIATION.

THE forty-eighth annual meeting of the British Association for the Advancement of Science has been held during the past week at Sheffield. Biology was better represented than is often the case, the President, Dr. Allman, being himself eminent in this department. His inaugural address, delivered on the 20th inst., was an admirable exposition of the doctrine of the unity of organised beings, as shown in the all-pervading distribution of the material known as protoplasm,—truly the physical basis of life. The address of Mr. St. George Mivart, as President of the Biology section, was also a thoughtful and well-considered statement of the present position of biological science. Taking Buffon and his works as the text of his address, Mr. Mivart urged the claims of that once popular naturalist to serious attention, and he especially dwelt upon the questions of variations in animal life and of pyschology in animals. The President of the sub-section of Anatomy and Physiology, Dr. Pye-Smith, in his address on Monday last, brought into strong relief the aims of physiological inquiry, and vigorously attacked the prevailing spirit of antagonism to such inquiry in this country. This address was full of pointed sarcasm and indignant protest. The claims of vivisection have seldom been so forcibly or thoroughly put. On Monday evening Professor Ray Lankester gave a lecture on Degeneration in Animal Life—in other words, the process by which organs become less and less adapted to the complex requirements of life, pointing out towards the close of his lecture that in some respects civilised man had undergone a like downward change.

THE MURCHISON MEMORIAL.

Fourth List of Subscriptions.

	£	s.		£	s.
The Dean of Lichfield	1	1	Dr. J. Risdon Bennett, F.R.S.	3	3
Dr. Morehead (Edinburgh)	5	5	Dr. Andrew Fyfe	1	1
Dr. Lockie (Carlisle)	2	2	Rev. J. Wale Hicks (Cambridge)	1	1
Dr. Vereker Bindon (London)	1	1	Dr. G. C. Child-Chaplin (Arbroath)	1	1
Dr. Cleghorn (St. And.)	1	1	Prof. Charcot (Paris)	3	0
Dr. Moir (St. Andrews)	5	5	Messrs. Harper and Jackson (Barnstaple)	1	1
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Berkeley Hill, Esq.	3	3			

Correspondence.

"Audi alteram partem."

MR. SAVORY AND MR. LISTER.

To the Editor of THE LANCET.

SIR,—When, a few weeks ago, I heard that Mr. Savory was going, at Cork, to criticise Listerism, I was rather pleased than otherwise. Pleased because I like criticism. I like to see a strong man that has been honourably associated with an old system, take his sword in hand and do such battle as he can with the Iconoclast. History would fail to repeat itself, and we should begin to doubt the courage or ability of men over forty to show a proper resistance to "every wind of doctrine," if the revolution in surgery which has been effected—even on Mr. Savory's own showing—were to pass unchallenged. I was the more pleased, probably, because I felt sure that it was not possible for even such an able man as Mr. Savory to abolish antisepticism, or to show that it had not to be considered as a principal factor in the astounding diminution of "surgical calamities" which we have happily seen within recent years. The result justifies the feeling of pleasure with which I anticipated Mr. Savory's attack. It is really a vindication. And the more closely it is studied the more will it appear that if Mr. Savory sees no objection to such a way of expressing the practical and scientific value of Mr. Lister's contributions to the prevention of blood-poisoning in the practice of surgery, Mr. Lister need scarcely complain. Mr. Savory admits that it is only within the last few years that the transmission of septic fluids into the blood has become uncommon. We all know how common it was up to fifteen or twenty years ago. A brilliant amputation was performed before an admiring theatre. Two or three days after the man was not quite right. He was dull about the eyes, had had a rigor, his pulse was quick, he was hot. In a day or two more he was dead.

Now, as Mr. Savory says, this is an exception, and when it occurs it is a disgrace—"the disgrace of the occurrence of blood-poisoning." Well, history will infallibly say, even if the details of Mr. Lister's method are superseded, that the man who has done most to take that "disgrace" out of surgery is Mr. Lister. And I confess that from an orator and an observer like Mr. Savory I should have been pleased to see a great deal more praise towards Mr. Lister than is to be found in this address. The prevention of blood-poisoning has probably done more for the reputation of surgery and the saving of life than any improvement in surgery since the discovery of the ligature. It is an illustration of the too historical want of magnanimity in contemporaries and rivals that the tone of an address on this subject should have been throughout stinted and critical in its allusions to the surgeon who has conspicuously had most to do in bringing about the change. Leading London surgeons have not, as a body, accepted antisepticism. At Bristol, or at Newcastle, or at Glasgow, or in other provincial towns, it can be seen carried out as faithfully and with as brilliant results as in Mr. Lister's own wards. And many surgeons in the metropolis, who have respect for their peace of mind and their reputation, are studying and practising it with more or less skill and faithfulness. But the rulers of surgery in the metropolis have not taken kindly to it. I should doubt whether there is one member of the Court of Examiners—that is, one of the examiners in surgery in the College of Surgeons of England—who practises antiseptic surgery in the scientific sense of that word, or who has carefully put himself into a position to form an accurate judgment on the subject. A student examined by them would not be likely to come away with the feeling that one of the great duties of the surgeon was to acquaint himself with the details of antiseptic surgery. The Court of Examiners, in other words, does not represent modern surgery. This is not the place to comment further on such a serious state of matters, or on the need for some change in our examining system by which it will be made to tell a little more quickly in favour of progress. We clearly want the

examiners examined. As I consider that Mr. Savory has been very ably answered in the letter of Mr. J. Greig Smith, of Bristol, and will be yet further answered in clinical detail by those who are better able than I am to do so, I shall content myself with two or three further remarks in answer to Mr. Savory's objections. They are chiefly these :—

First : *Mr. Lister withholds statistics.* I should be as pleased as anyone to see any statistics that Mr. Lister thought fit to publish, but no one knows better than Mr. Savory how different statistics are from facts, and how impossible it is, in surgery at least, to know what they mean, or make them available for purposes of comparison. Take twelve cases in one hospital of compound fracture, and twelve in another, and put them into a statistical table. They have exceedingly little value apart from a complete clinical history of each case. One case may be in a boy with slight violence to textures, with no degeneration of organs, in a healthy county infirmary, where it is almost impossible to kill people ; another may be in a gin-drinker of sixty, with comminuted fracture and great disorganisation of soft parts. What is the value of statistics that take no account of differences such as these ? Such details do not admit of statistical statement. If the little worth of statistics was well known before Mr. Savory's address, it has been strikingly demonstrated by the tables which he brings forward. He gives us certain great classes of accident, disease, and operation, with their respective results, but with such want of detail as to be valueless. The figures cover every variety of practice and procedure. Mr. Savory's cases are not distinguished from—say Mr. Callender's, whose practice it is known is exceedingly careful, and considerably antiseptic in its character ; or from Mr. Smith's, who, I believe, frequently uses Mr. Lister's precautions. The elimination of these might, and probably would, alter for the worse the result which is so boasted. But this is not all. We are told that, "for various reasons," certain classes of cases are omitted—amongst them ovariotomies, which are the last and crowning triumph of antiseptic surgery. Dr. Keith has recorded forty ovariotomies or more without a death ; and Mr. Wells, who, to his credit, has lately used all Mr. Lister's precautions, has exceeded himself, and is having, as I chance to know, a remarkable series of deathless ovariotomies. But "for various reasons," these operations are omitted in Mr. Savory's statistics. It is unreasonable to complain of Mr. Lister withholding statistics, when Mr. Savory shows, by attempting statistics, how valueless they are ; the more so when we remember that Mr. Lister's work and wards have been under the keen inspection of European and American surgeons for the last fifteen years. It is equally so to represent the reputation of antiseptic surgery as based on isolated cases, when such series of cases as those lately published of ovariotomies and osteotomies attest its utility.

Secondly, *Mr. Savory likes a little suppuration.* He lands pus, as the old surgeons used to do. And here is one of his unconscious tributes to the antiseptic system. It has abolished pus. Instead of the old fountains of stinking pus which we remember, welling up from the depths of a wound, in a pale, shattered, hectic patient, we now see dressings taken off in which scarcely a particle of pus can be detected, and the patient in a day or two after the first very slight shock of the operation, looks as comfortable as other people. The abolition or great abatement of suppuration is not only one of the chief glories of antisepticism, but is a most wonderful physiological fact. I am quite sure that if I had to have a compound fracture treated, or a knee-joint resected, I should not like any antiseptic precaution omitted, and I believe this would be the general feeling of medical men. The difference between a little suppuration and none means a great difference to the patient, as the difference between a degree or two of fever and none makes a difference between the feelings of illness and those of health. I say nothing of the odd pints of pus that used to be taken out of patients under the poulticing system, and of all the chronic internal disease to which it led, and under which the patient died, probably, with lardaceous disease under the care of a medical colleague—surgery shifting the discredit of death on to medicine.

But, thirdly, Mr. Savory, says *the antiseptic dressing is irritating.* I very much question the accuracy of this charge. I have seen a great deal, and nothing strikes me so much as the happy healthy look of patients who have lately undergone the gravest operations. They are reading their papers ; they meet you with a smile ; their blood is intact and has not been impoverished by the drain of suppuration, and their temperature is normal or nearly so. I mean, for curiosity's sake, some day to try to find out an old-fashioned ward where carbolic acid is ignored, and where the cleanliness is not what Mr. Savory calls surgical, but what I should call scientific. It is quite possible that Mr. Lister's precautions are excessive. So they should be. There are evils so disastrous and so discreditable that an excess of caution should be practised to avert them. Probably if Mr. Savory would go to the same excess of care he would be able to reduce still further the deaths from blood-poisoning, and so make still more creditable the statistics with which he favours us, to say nothing of those which "for various reasons" he withholds.

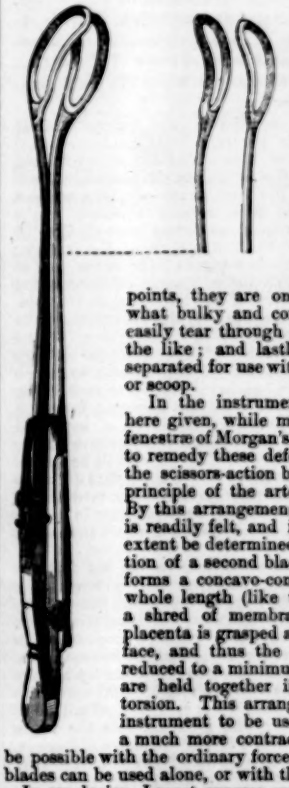
I am, Sir, your obedient servant,

August 25th, 1879. APYREXIA.

NEW OVUM AND PLACENTA FORCEPS.

To the Editor of THE LANCET.

SIR,—Although the educated finger is the best possible instrument for the removal of an early ovum, a bit of placenta, or a shred of membrane from the uterus, every practitioner will admit that there are cases in which the finger requires either to be supplemented (as by a blade to act in apposition with it) or superseded, as by a pair of forceps.



The best forceps which I have seen are those of Mr. H. Morgan, of Lichfield ; but they, in common with all ovum or placenta forceps, appear to me to possess certain defects : thus the cross action, with bows for finger and thumb, prevents any delicacy of touch, which is most important, as in their use one has to rely solely on feeling, and not sight. Again, as the blades approximate only at the points, they are only applicable to a somewhat bulky and consistent mass, and would easily tear through a shred of membrane or the like ; and lastly, the blades cannot be separated for use with the finger, or as a spoon or scoop.

In the instrument of which a figure is here given, while maintaining the curve and fenestræ of Morgan's forceps, I have attempted to remedy these defects. First, by replacing the scissors-action by a weak spring, on the principle of the artery or dissecting forceps. By this arrangement the smallest substance is readily felt, and its nature can to a great extent be determined. Secondly, by the addition of a second blade, which with its fellow forms a concavo-convex, and bites along its whole length (like the craniotomy forceps) ; a shred of membrane or a friable bit of placenta is grasped along a much larger surface, and thus the danger of tearing off is reduced to a minimum ; by a catch the blades are held together if it is desirable to use torsion. This arrangement, too, permits the instrument to be used without risk through a much more contracted os uteri than would be possible with the ordinary forceps. Lastly, either of the blades can be used alone, or with the finger.

In conclusion, I must express my best thanks to Messrs. Salt and Son, of Birmingham, for the care and skill which they have displayed in carrying out my ideas, and for the valuable practical suggestions by which the instrument has been most materially improved.

I am, Sir, yours truly,

J. HICKINBOTHAM, M.D. M.R.C.P. Edin.,
Physician to the Birmingham and Midland Counties Hospital for Women.

THE VENTILATION OF SEWERS.

To the Editor of THE LANCET.

SIR,—Your editorial notice of Dr. Charles Kelly's Fifth Annual Report to the West Sussex Combined Sanitary Authorities, and your remarks upon the "Ventilation of Sewers" in particular, in the issue of the 9th inst., allow of some differences of opinion upon this latter subject and the principle of sewer ventilation therein set forth.

Whilst congratulating Dr. Kelly on the success of the remedial measures he carried out in the particular instance he mentions at Steyning, it seems to me, as an advocate for surface ventilators, that the same end might have been gained by surface ventilation. To substantiate this opinion reasons may be deduced from what follows.

It being understood that the object of ventilating sewers is not only to allow the escape into free air of noxious gases generated in sewers, but especially to pass such a quantity of pure air through sewers that these gases may, in their nascent form, be oxidised and rendered harmless, the inference is that if a nuisance from sewer gas manifests itself at any sewer ventilator (excluding deposits in the sewer as a cause), such sewer or system of sewers is insufficiently ventilated. Bearing in mind this object in true ventilation, such excuse as that the sewer gases ascend from the lower to the higher points in a system of sewers cannot be maintained. Besides the principle of immediate oxidation, a little engineering would readily cut off one system of sewers from another, and protect the inhabitants at one end of a system of sewers from any noxious influences which the inhabitants at the other end may create.

Assuming that sewer ventilators are proportionately adequate to the size of the sewers, a brief consideration of the forces which determine currents of air in sewers and through ventilators, with the attendant circumstances, will demonstrate by which of the two means—by long or short shafts—ventilation will be most readily obtained. In a natural system of ventilation these forces are—(1) the ebb and flow of the sewage; (2) the temperature of the sewage; (3) the differences in the temperatures of the sewer and of the external air; (4) the diffusion of gases; (5) the varying barometric pressure, both diurnal and according to altitude. The opposing forces to these are—(1) the reduction of the temperature of the sewer air to the temperature of the external air; (2) the character of the medium through which diffusion takes place; and (3) the friction to which the sewer air is subjected in passing through the ventilating shaft. Comparing the motor with the opposing forces, it will be manifest that, the average temperature of sewer air being but 5° in excess of the average temperature of the external air, the motor force of temperature will be better maintained in a short than in a long shaft; that diffusion will take place more quickly through a shallow medium of air in a short shaft than through a deep medium in a long shaft; and that friction is much less in a short than in a long shaft.

Besides the preponderance of reasons herein set forth in favour of surface ventilation, there are others which may be advanced against long shafts. In the first place, they are (so far as my observations have extended) of insufficient size. Though acting as escapes, they rarely relieve air-pressure in sewers sufficiently to protect the water-seals or house-drains. In the next place, such pipes are generally run up against gables of houses; and thus sewer air is brought more into the proximity of dwellings than when escape is permitted at the street surface. Heated gases, escaping into the upper air, cool and fall to the surface; it may be down chimneys, or through bedroom windows, or it may be that each shower of rain which washes the atmosphere, dissolving these gases, is stored in cisterns, from whence noxious influences may be traced. Under ordinary circumstances sewer air escaping at a street surface ventilator is, with the air there, generally kept in agitation and circulation by such means as traffic and the usual physical causes which circulate air.

In conclusion, I wish to make two suggestions (which I have seen nowhere mentioned), which pertain more perhaps to the sanitary engineer, but which will be of interest to the medical officer of health. It is a frequent complaint that the "high-town" is poisoned by the "low-town" sewer gases. Such complaint is often too true, and its origin is clearly not equitable. As house-drains are now disconnected from sewers, so should one district of a town-sewer be disconnected from another, and each district be made to "consume" its own sewer-gases. The position of ventilation is supposed to effect this, but it is found not to work out in practice. Whilst maintaining a through current and perfect ventilation in each district of sewers, this disconnection may be accomplished by placing stops, such as water-seals or flap-valves, at the lowest terminals of each district to direct the current of air from the sewers below into the external air. The second suggestion is borrowed from the ventilation of small mine-shafts, and is designed to add a force to the circulation of air in sewers and ventilating shafts. Such mine-shafts are divided by a diaphragm, and naturally one portion of the shaft becomes an up-cast and the other a down-cast shaft. In sewer-ventilators such a diaphragm might be placed, where, doubtless, they would be found, as in mines, of much service in creating air-currents, and of especial advantage in flat-lying districts.

Though expressing a contrary opinion to that which you, Sir, have generally advocated as to the manner in which the ventilation of sewers may be best effected, I am pleased that through your columns public attention has been directed to this important subject. And I hope yet to see more divergent views expressed, and arguments given for and against the various methods of sewer-ventilation, from all of which good must result, and one more blow be dealt to that most insidious enemy to the public health—sewer-gas.

I am, Sir, yours, &c.,

J. LLOYD-ROBERTS,
Medical Officer of Health.

Denbigh, Aug. 19th, 1879.

"THE GENERAL PRACTITIONER."

To the Editor of THE LANCET.

SIR,—Your leader on "the general practitioner" will, I am sure, give satisfaction to the profession, but I think the fault is not with the public, who are being gradually educated up to the condition of things you reprobate by the action of many medical men. What is required, in the interests alike of the physician, consulting surgeon, and the general practitioner, is a clearly marked distinction between them, not only in the question of fees, but also in the line of practice to be pursued by each. No person can be, or ought to be, at the same time a consultee and an ordinary practitioner. I do not mean that one general practitioner should never meet another in consultation, for this must necessarily be done in country districts; but my objection is to a man, designating himself by the term physician, assuming a higher position in the profession and before the public in consequence, and yet, in the matter of fees, yearly accounts, and mode of practice, being slightly, if at all, to be distinguished from his humbler brethren in the profession.

My late partner, Dr. Webb, though bound by agreement made on the sale of his share of the general practice to me to practise solely as a physician and consulting surgeon, is actually competing with the general practitioners of the town for family practice. He has seen patients both at their own homes and at his house for fees much less than the traditional honorarium, and sends out bills at Christmas. In what except dispensing is he to be distinguished from a general practitioner? When such anomalies are found can you wonder at the public mistaking the relations which exist, or ought to exist, between medical men? As long as such antagonism continues it is no matter for surprise that the general practitioner occasionally views with suspicion both consultations and consultees. How can I recommend a consultation when I know that the patient I am attending was last year, and may be next month, under the care of the gentleman I call in? I feel confident that medical men would much more frequently call in physicians could they feel sure that their interests were not in danger of injury. Let the physician give up general practice; his income will not be diminished, as he will be more frequently called in; there will be no antagonism between the sections of the profession; the public will quickly learn the change, and I think all parties will appreciate it. Meanwhile the best thanks of

the general medical practitioners are due to you, Sir, for your able exposition of his position and for your efforts on his behalf.

I am, Sir, yours obediently,

Wirksworth, August 26th, 1879. WM. MILLIGAN.

To the Editor of THE LANCET.

SIR,—With reference to your leading article on the relations subsisting between the consultee and general practitioner, I should like to call your attention to a case which occurred in my practice a few weeks ago. A gentleman, who has both lungs affected with phthisis, was advised by me, before the cold weather began, to consult a London physician as to the state of his chest, as I have some doubts whether he will live through the ensuing winter. Accordingly he went up to the gentleman I named, who is an entire stranger to us both, and he, after examination, gave my patient minute particular directions as to the treatment he advised, and ended by asking him to come up again in the course of a month. To myself a letter was sent containing an account of the physical signs and symptoms, but with only a most general idea of the treatment. In consequence I lose a good patient, and my London friend, instead of advising me for my patient's benefit and referring him to me, really takes the case into his own hands.

This plan must on repetition cause country medical men to avoid sending their patients to London for advice, and make them prefer calling in one of their local *confrères*, who at least will not be likely to take the case out of their hands.

I am, Sir, your obedient servant,

MEDICUS.

A CORRECTION.

To the Editor of THE LANCET.

SIR,—In the current number of THE LANCET it is stated that the "Bideford" Board has withdrawn from the present combination. This is an error, and I should be glad if you would correct it. The Bideford Board at their last meeting unanimously resolved to uphold the combination, and re-elected the present writer. The Torrington Board has, however, passed the following resolution:—"That this authority considers the services of a medical officer of health unnecessary, and at the termination of the present contract intend to withdraw from the combination with other unions, and discontinue the services of such officer." On the above I make no comment.

I am, Sir, yours truly,

Barnstaple, Aug. 23rd, 1879. A. WYNTER BLYTH.

PARIS.

(From our own Correspondent.)

THE last two sittings of the Academy of Medicine have been devoted to a discussion in pharmaceutical specialities, and some statements have been made by high authorities which are likely to bring many favourite remedies into discredit. Professor Vulpian, the Dean of the Faculty of Medicine, read a memoir by M. Mourrut on artificial digestion, embodying his researches on the value of the different digestive principles. M. Mourrut finds that the action of diastase is considerably retarded by the addition of an acid, whilst that of pancreatine is entirely abolished. If after two hours the acid solution be neutralised, diastase rapidly regains its sugar-forming property, but this is not the case with pancreatine, which remains inactive with respect to starch, and most probably also to albumen. With regard to pepsine, which is extensively used in the form of wines and elixirs, M. Mourrut assures the Academy that the quantity of alcohol in these preparations suffices to render them useless, and concludes that they should be proscribed in future by the prescriber. And the more so as many of the most renowned elixirs sold contain traces only of the ferment to which they are supposed to owe their virtue, the rest having been precipitated no doubt by the alcohol in the preparation of the medicine. At the following meeting a short note was read by M. Personne on "dialysed" iron. This he described as a sesquioxide of iron mixed with 7 per cent. of perchloride, and 1 per cent. of persulphate, insoluble in water, and incapable of passing through the dialyser. It is, moreover, almost entirely insoluble in strong acids and in the gastric juice, and when administered to animals during digestion is always found to have been precipitated. These views were endorsed by M. Berthelot, who gave it as his opinion that dialysed iron was "absolutely incapable of acting upon the economy." If this be true druggists have the very best reason for pushing its sale. Assimilable salts of iron are most frequently ill-tolerated, and in many cases are productive of more harm than good. A really inert preparation would have many advantages. Amateur doctors might physic themselves and their friends to their hearts' content, and whilst the precipitation of the metal in their digestive tubes would obviate any unpleasant consequences, the moral effect of a "course of steel" would still prove most salutary.

M. Chatin took the opportunity afforded by these communications to point out to the Academy the evils resulting from the use of special remedies, and insisted upon the necessity of thorough reform. The present state of pharmacy in France is, indeed, anything but satisfactory. On commencing life, the *pharmacien* finds that his business consists in retailing patent medicines over the counter, at a profit of from 10 to 15 per cent. A few months' experience generally suffices to show that this cannot be made to pay, and a specialty becomes almost inevitable. Money is always to be found for this purpose; for any medicine with an imposing name, backed by a few medical certificates and advertised widely, is certain to be swallowed by the public. No wonder therapeutic scepticism is now the rule with prescribers. Thanks to the enterprise of wholesale druggists, a host of *elegant* preparations are always at hand, which relieve the scientific *clinicien* from the ridiculous absurdity of writing a useless formula. Now that diseases are allowed to run their normal course under the watchful eye of the medical naturalist, the exhibition of an inert but *elegant* granule must be considered a vast improvement upon the active interference of our physicking forefathers.

Paris.

Obituary.

DR. JOHN WALLACE.

DR. JOHN WALLACE, of the Army Medical Department in India, whose death from cholera we announced in our last issue, received his classical education at Aberdeen, where he took the degree of M.A. in 1859. In 1862 he graduated in medicine at Edinburgh, and in the same year passed the Royal College of Surgeons of England. In March, 1864, he was gazetted assistant-surgeon of the 12th Foot, which he joined in New Zealand, and was present with it at the attack and capture of the fortified pah of Otapawa. He served in New Zealand till September, 1867, when he returned with the regiment to England. On March 1st, 1873, he was promoted to the rank of surgeon, and in April, 1876, to that of surgeon-major. He continued to do duty at home till September, 1876, when he embarked for Bengal, where he had since served. His death took place at Lundi Kotal on June 16th. He had the character of being an excellent and efficient officer, and was much loved and respected both by the officers and the men of the 12th Regiment, in which he passed the greater part of his service.

HENRY ALFRED CHATHAM GRAY.

MR. GRAY was the son of one of the senior members of the Madras Subordinate Medical Service. He was born in India, and received his education at Bishop Corry's grammar school, of which he was a distinguished pupil. Having obtained a Government scholarship, he entered the Madras Medical College, and passed with credit his preliminary scientific and first M.B. examinations, and would have proceeded to his degree but for a rule issued by the syndicate of the University, and made to have a retrospective character, so as to include those gentlemen

studying at the time in the college. By this rule he was disqualified for the M.D., as he had not attained his B.A. After winning several prizes in the college he went to Edinburgh, and graduated at its University, gaining honours in several subjects. He then successfully competed for a commission in the Indian Medical Service, taking a high place amongst the candidates, and selected Bengal for the sphere of his future professional duties, in the faithful and brave discharge of which he died, falling a victim to the disease he was actively employed in combating in others. Mr. Gray was a man of no mediocre ability; his well-furnished mind, his studious, plodding habits, his untiring energy and honest character, promised much honour for his name. His literary efforts in the medical and scientific journals gave great promise of a brilliant future. His poetic flights in fancy's airy fields procured for him amongst his friends and fellow-students the *sobriquet* of "the bard," and received encouragement from so able and accomplished a judge as Professor Blackie of Edinburgh. Mr. Gray leaves behind him a widow and an only child.

Medical News.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on the 14th and 21st instant:—

Ballance, Charles Alfred, Stanley House, Lower Clapton.
David, William, Rhondda Valley, Glamorganshire.
Davies, Arthur Mercer, Barnard's-inn.
Davies, Evan Naunton, Cymmer, Pontypridd.
Davies, John Morgan Lloyd, Bank House, Cardigan.
Glanville, Francis Ferratus, Western Dispensary, Westminster.
Hoskyn, Donald Templeton, Birchington-road, Kilburn.
Hooley, Arthur, Heaton Chapel, Cheshire.
Mudge, James, Hayle, Cornwall.
Parette, James, Sirhowy Ironworks.
Rowlands, Hugh Pugh, Bryngwyn Towyn, Merionethshire.
Vaz, Jacinto Caetan, Bombay.
Wright, Christopher St. John, Priors Maston, Warwickshire.

The following gentlemen on the same days passed the Primary Professional Examination:—

William Collier, Sheffield Medical School; Alfred Fordham and George Beardmore Waterhouse, London Hospital; Benjamin Robt. Archer Taylor, Guy's Hospital; Wm. Richardson Thomas, St. Bartholomew's Hospital.

THE will of Dr. Charles Radclyffe Hall, of Torquay, has been proved under £90,000.

MR. W. F. ROCK, of London, has presented an extensive park to Barnstaple, his native town, for the use of the inhabitants for ever. The presentation was celebrated by a general holiday.

IN London last week 1322 deaths were registered, representing an annual rate of mortality of 19·1 per 1000. Of the zymotic class of diseases, scarlet fever was the most fatal, next to diarrhœa. To the former 61 deaths were attributed, and to the latter 174; whilst 4 were due to small-pox, 42 to measles, 11 to diphtheria, 40 to whooping-cough, and 19 to different forms of fever. Diseases of the breathing organs were fatal in 165 instances—a number exceeding the corrected average by 32.

TREASURE TROVE IN EXETER CATHEDRAL LIBRARY.—The Rev. H. E. Reynolds, Librarian of the Cathedral Library, Exeter, has made the discovery of a most interesting little work in the boarding of a copy of Jac. Fabri Stapulensis "Comment in Epistolas Catholicas," a folio volume printed at Basle in 1527, the four leaves of the pamphlet having been opened and pasted as a folio sheet inside the cover in binding up the book. The newly-found copy of the "Practyse of Cyrurgyons" is in a fine state of preservation, and is an inch taller and wider than that of the only other copy known to exist—that which is in the British Museum. It is not in the Bodleian, nor yet in the extensive special collections of the Royal College of Surgeons, the Royal College of Physicians, or the Royal Medical and Chirurgical Society. The description is as follows:—"¶ The practyse of Cyr/urgyons of Mountpyl/ler: and of other that neuer came there/ [woodcut on title-page of the two surgeons consulting] [Begins on second page] The causys why many/a man dothe dye: . . [ends on page 8]. Let us praye euermore for/ his mercy. Amen. ¶ Finis protempore/ ¶ Imprynted by me Rycharde/ Banckes. Cum priui/legio Regali/ Ad imprimendum solum. [Woodcut of St. Luke, the Physician.] 4° [no place nor date, ? 1540] 4 leaves unpaged. Black Letter." Richard Bankes, Bankys, or Banks, was a bookseller and printer, who is said by Ames to have carried on his business for about twenty-five years; but there are comparatively few books bearing his imprint, and those with dates were issued between 1525 and 1542. He printed several other works relating to medicine, such as "The Seynge of Vrynes," 1525; "Vertues and Propertes of Herbes," 1526; "The Questionary of Cyrurgens," 1541; "Tretyse ayenst Pestylence," n.d., &c.

Medical Appointments.

ADAMS, J., M.D., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Islington District of the Newton Abbot Union, vice Taylor, resigned.

ALLNUTT, W., M.R.C.S.E., L.S.A.L., has been appointed Public Vaccinator for the District of Westbury, Tasmania.

CAMERON, A., M.D., C.M., has been appointed Certifying Factory Surgeon for the District of Caistor, Lincolnshire.

CANT, W. J., M.R.C.S.E., L.S.A.L., has been appointed House-Surgeon to the Lincoln County Hospital, vice Gamble, resigned.

CHRISTIE, J. W. S., M.D., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Assistant Medical Officer to the Coton-hill Institution for the Insane, near Stafford, vice Smith, appointed an Assistant Medical Officer to the Essex Lunatic Asylum, Brentwood.

COLGATE, R., F.R.C.S.E., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Eastbourne, Sussex.

CREW, J., L.R.C.P.L., M.R.C.S.E., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Higham-Ferrers.

DAY, R. N., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the Harlow District of the Epping Union, vice Madden.

DENNY, C. J., L.K.Q.C.P.I., M.R.C.S.E., has been appointed a Medical Officer to the Yateley Tradesman's Friendly Society.

DODD, H., jun., M.R.C.S.E., has been appointed a Medical Officer to Court Langley Lodge of the Ancient Order of Foresters, Sherburn, Yorkshire.

EARLE, B. N., M.B., Sanit. Sci. Cert. Cantab., has been appointed Medical Officer of Health for the Droxford Rural Sanitary District, Hants, at £150 for one year, vice the Poor-law District Medical Officers, whose appointments have expired.

ELLAM, J., L.R.C.P.L., M.R.C.S.E., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Radcliffe-on-Trent.

ELLIOT, H., M.R.C.S.E., L.R.C.P.Ed., has been appointed Medical Officer and Public Vaccinator for the No. 6 District of the Maidstone Union, vice Bury, resigned.

ELMSLIE, W. W., L.R.C.P.Ed., L.F.P.S.G., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the Alberbury District of the Atcham Union, Salop.

EVANS, W. C., M.B., C.M., has been appointed Medical Officer and Public Vaccinator for the No. 2 or Begelly District of the Narberth Union, and Medical Officer of Health for the No. 2 Sub-district of the Narberth Rural Sanitary District, Pembrokeshire, vice Allen, resigned.

FERNIE, A., M.R.C.S.E., L.S.A.L., has been reappointed a Medical Officer of Health for the Barnstaple Rural Sanitary District, at £50 per annum, until Christmas, 1879.

FURNESS, J., L.F.P.S.G., has been appointed Medical Officer and Public Vaccinator for the Caldbeck District of the Wigton Union; also Medical Officer to the St. Mungo Lodge of Odd Fellows, Caldbeck, Cumberland; both vice Brown, deceased.

GRIMBLY, R. H., M.R.C.S.E., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Newton-Abbot, vice Gill, resigned.

HALLAM, W., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the Brightside East District of the Sheffield Union, vice Leeds, resigned.

HALPIN, G. H., L.R.C.P.Ed., L.R.C.S.I., L.A.H.D., has been appointed Certifying Factory Surgeon for the District of Wicklow.

HARKER, J., M.D., L.R.C.P.Ed., has been reappointed Medical Officer of Health for the Lancaster Rural Sanitary District, for one year.

HARTLEY, C., M.R.C.S.E., L.S.A.L., has been reappointed a Medical Officer of Health for the Barnstaple Rural Sanitary District, at £50 per annum, until Christmas, 1879.

HEYNES, J., M.R.C.S.E., L.S.A.L., has been appointed a Medical Officer to the Yateley Tradesman's Friendly Society.

HODSON, H. A., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Bovey Tracey District of the Newton Abbot Union, vice Taylor, resigned.

HOETS, A. K., L.S.A.L., has been appointed Assistant Medical Officer to the Woolwich Union Workhouse and Infirmary at Plumstead, vice Pryce, resigned.

JACKSON, H., M.R.C.S.E., L.S.A.L., has been reappointed a Medical Officer of Health for the Barnstaple Rural Sanitary District, at £50 per annum, until Christmas, 1879.

JAMES, W. D., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the No. 3 District of the Ecclesall-Bierlow Union, Yorkshire, vice Harrison, resigned.

JONES, T. S., M.B., C.M., has been appointed Certifying Factory Surgeon for the District of Swansea, vice Frothero, resigned.

LAKING, F. H., M.D., has been appointed Surgeon-Apothecary to the Household of H.R.H. the Prince of Wales.

LEWIS, J. I., M.R.C.S.E., L.S.A.L., has been appointed Assistant Medical Officer to the Leeds Amalgamated Friendly Societies' Medical Aid Association.

MCLEARN, I. C., M.D., C.M., has been appointed Assistant Medical Officer to the Holborn Union Infirmary, Archway-road, Upper Holloway.

MAYNE, N., L.K.Q.C.P.I. & L.M., L.R.C.S.I., has been appointed Certifying Factory Surgeon for the District of Longford.

MORSE, R. E. R., M.R.C.S.E., has been appointed a Junior Resident Medical Officer to the Royal Free Hospital, vice McKeogh, resigned.

O'FARRELL, G. P., M.D., M.R.C.S.E., has been appointed Certifying Factory Surgeon for the District of Boyle, co. Roscommon, vice H. O'Farrell, M.D., F.R.C.S.I., resigned.

O'SHAUGHNESSY, P. J. B., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer to the Workhouse, Kanturk Union, co. Cork, at £80 per annum, and £20 per annum as Consulting Medical Officer of Health, vice Barry, deceased.

PAGE, D., M.D., has been reappointed Medical Officer of Health for the Bowness, Grasmere, and Windermere Urban, and East Ward, Kendal, Sedbergh, Ulverston, and West Ward Rural, Sanitary Districts, at £598 per annum, for three years.

POPERT, A. J., M.R.C.S.E., L.S.A.L., has been appointed Resident House-Surgeon to the Southport Infirmary, vice Murray, resigned.

ROBINSON, A. H., M.B., M.R.C.S., has been appointed Senior House-Surgeon to the Hull General Infirmary, vice Smallman, resigned.

ROWLEY, C. O., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the No. 2 District of the Barnsley Union, vice Stawman, resigned.

RUSSELL, J., M.D., M.R.C.S.E., has been appointed a Medical Officer to the Yateley Tradesman's Friendly Society.

SHORT, W., L.F.P.S.G., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Harrogate.

TATE, A. L., L.R.C.S.Ed., L.R.C.P.Ed., has been appointed Assistant Medical Officer to the Suffolk Lunatic Asylum, Melton, vice Peacock, appointed to the Dorsetshire Lunatic Asylum, Dorchester.

WALKER, Mr. H. H., has been appointed Public Analyst for the Borough of Doncaster, at 12s. 6d. per analysis, and 21s. for each attendance as a witness.

WALKER, J. H., M.A., M.B., C.M., has been appointed Certifying Factory Surgeon for the District of Friockheim, Forfarshire, and Medical Officer and Public Vaccinator for the Parishes of Kirkden, Guthrie, and Kinnell, vice Polson, resigned.

WEEKES, H., F.R.C.S.E., has been appointed Medical Officer of Health to the Melksham (Wilts) Urban Sanitary Authority, and Public Vaccinator and Certifying Factory Surgeon to the Melksham District, vice Perry, deceased.

WHISTLER, T. L., M.B., F.R.C.S.I., has been appointed Certifying Factory Surgeon for the District of Bray, co. Wicklow.

WORSLEY, H., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Bow and Colebrooke Districts of the Crediton Union, Devon, vice Hutton, resigned.

Births, Marriages, and Deaths.

BIRTHS.

BELEMORE.—On the 7th inst., at Pembroke Dock, the wife of Alfred John Belemore, M.R.C.S.E., Surgeon-Major, Army Medical Department, of a daughter.

CAMERON.—On the 11th inst., at Liege, the wife of Charles Cameron, M.D., M.P., of a daughter.

GRIGOR.—On the 17th inst., at West Stanley, co. Durham, the wife of Macadam Grigor, L.R.C.P.Ed., of a daughter.

PATRICK.—On the 19th inst., at Greenhead-street, Glasgow, the wife of William Patrick, M.D., of a son.

RICHARDSON.—On the 13th inst., at Berwick-on-Tweed, the wife of Henry Richardson, M.D., Fleet Surgeon R.N. (retired), of a daughter.

WHITLOCK.—On the 26th inst., at The Limes, Linton, Cambs, the wife of J. E. Northmore Whitlock, Surgeon, of a daughter.

MARRIAGES.

BOWES—BUTLIN.—On the 14th inst., at St. Luke's, Duston, John Ireland Bowes, M.R.C.S.E., to Mary Sophia, daughter of W. Butlin, Esq.

PARSONS—WELLS.—On the 27th inst., at the Parish Church, Armin, Yorkshire, Henry Franklin Parsons, M.D., of H.M. Local Government Board, to Louisa Anne, eldest daughter of the late John Wells, J.P., of Booth Ferry House, Howden, Yorks.

SUGDEN—FRANCIS.—At Maryborough, Queensland, D'Arcy Sugden, L.R.C.P., L.M.R.C.S.E., of Bundaburg, Queensland, son of the late William Sugden, of Bath and Bristol, to Amy Francis, daughter of T. H. Francis, of Finsbury-park, London.

DEATHS.

BULL.—On the 19th inst., at Jersey, Martin Meggison Bull, M.R.C.P.L., aged 58.

DALY.—On the 21st inst., at Talbot-street, Dublin, Dr. James Daly.

FOX.—On the 26th inst., at 14, Harley-street, Mary Catherine Harries, widow of Dr. L. O. Fox, of Broughton, Hants, and mother of the late Dr. Tilbury Fox, in her 68th year, surviving them both but a few weeks.

GOOCH.—On the 22nd inst., at Grove-hill, Ventnor, William Henry Gooch, M.D., aged 68.

HAY.—On the 23rd inst., at Christchurch, New Zealand, Dr. Thomas Bell Hay. (By telegraph.)

JAGOE.—On the 21st inst., at Bandon, Benjamin Hays Jagoe, M.R.C.S.E., aged 50.

MAUND.—On the 11th inst., at Westmount, Sandown, Isle of Wight, Henry Maund, M.D., in the 52nd year of his age.

THOMAS.—On the 24th inst., John Henry Thomas, M.D., M.R.C.P., &c., of Cyfarthfa, Merthyr Tydfil, aged 48.

WILLIAMS.—On the 15th inst., at Denbigh, Evan Pierce Williams, M.D., aged 49.

N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

Notes, Short Comments, and Answers to Correspondents.

THE STUDENTS' NUMBER OF THE LANCET will be published on Saturday, September 13th. Those gentlemen holding official situations connected with Medical Institutions in the United Kingdom, who have not yet forwarded the necessary information to our Office for publication in that number, are earnestly requested to send it *without the delay of a single post.*

GRANT COLLEGE MEDICAL SOCIETY.

WE have received copies of Nos. 1 and 2 of the Proceedings of the Grant College Medical Society for 1879, one containing a paper by Mr. Temulji on the Nature and Treatment of the so-called Typho-remittent Fever of Bombay (the "Bombay remittent fever"); the other the Annual Address, delivered by the President, Mr. J. C. Lisboa. We regret to learn from the latter that the Society is not in so flourishing a state as could be wished; but with respect to his remarks on the indifferent attendance of the members, as contrasted with the members of the London societies, we doubt whether the comparison is so much in our favour as he imagines. The fact is, if Mr. Lisboa could compare attendances with numbers of members in our Societies here, he would probably find that the attendance at the meetings of the Grant College Medical Society is not so bad after all. It is clear, however, that the Society does not lack good material for discussion. The paper of Mr. Temulji referred to, and papers mentioned in the address by Dr. Blanc, Mr. Abdool Rahim Hakim, Mr. Balchundra Krishna, Mr. J. A. da Gama, and the President himself, dealt with numerous important subjects; and the annual address discussed others of not less importance. The office-bearers of the Society for the present year are:—President: Mr. J. C. Lisboa. Vice-Presidents: Messrs. Atmaran Pandurung and A. M. Continho. Secretary: Mr. C. F. Khory.

Mr. Warren's communication shall receive attention next week.

MENTHOL: AN ANTI-NEURALGIC.

To the Editor of THE LANCET.

SIR,—Allow me to mention that in neuralgia of the face I have several times applied a solution of menthol, a solid derived from the Chinese or American oil of peppermint, referred to in THE LANCET of 7th June last as a powerful antiseptic and theoretically anti-neuralgic agent. The solution used was, on a first trial, one of the melted crystals only; but to avoid the annoyance to the eyes from the extreme volatility of the remedy, and to obtain a more prolonged action, I afterwards used a mixture of menthol in rectified spirit, with the addition of a little clove oil, to a strength of one of menthol to sixty parts, painted over the affected tract. Relief was had in from two to four minutes, and within one or two minutes at most after this the then existing attack was cured. This, I think, goes far to show that the Chinese custom of painting with oil of peppermint in neuralgic cases owes its reputed efficacy to menthol as its active constituent. In cases of toothache the pain has disappeared within a few seconds after the application of a single crystal on cotton-wool. From this it is easy to go to sciatica, and I would recommend a trial of the crystals of menthol, melted, in this affection, as well as in intercostal neuralgia, brachialgia, and nerve pains in general.

I am, Sir, yours &c.,

A. D. MACDONALD, Stud. Med. Edin.

Braco, Perthshire, Aug. 5th, 1879.

NON-ARSENICAL WALL PAPERS.

Messrs. Wm. Woollams and Co., of High-street, near Manchester-square, call our attention to the omission, in the notice of their wall-papers which appeared on page 302 of THE LANCET of last week, of one letter of their name, which was printed "Wollams."

Mr. Marshall.—We fancy the co-operative movement has been carried far enough.

"BURMESE ITCH."

To the Editor of THE LANCET.

SIR,—In your issue of July 19th treatment for "Burmese Itch" is asked for, and as I have successfully treated several cases akin to it in this climate, I venture to submit the treatment I used. At one time such cases were very troublesome to me to manage, but of late years I have found them quite tractable to the following application:—From ten to twenty minims of carbolic acid, thirty-six minims of fluid extract of belladonna, in four ounces of distilled water. Apply three or four times a day. This may be diluted if it is too strong; or if the belladonna dries the skin too much, an ointment may be used occasionally. Internally, if there is an acid state of the blood, I give bisulphite of soda three times a day. The bowels and appetite to be attended to as required.

Very respectfully,

Zilwankie, Michigan, U.S.A. GEO. HENDRY, M.D.

DECREASE OF THE POPULATION OF GLASGOW.

THE medical officer of health for Glasgow, Dr. Russell, in his last published quarterly report (that for the March quarter), directs attention to a decrease in the population of Glasgow. This decrease began to manifest slightly in 1878, but now it is estimated to amount to 5000. The number of uninhabited houses in 1878 was 482, and this during the first quarter of the present year had increased to 1302. Eight per cent. of the rateable houses are empty, and building of dwelling houses has stopped. The decrease of population seems to be distributed very generally over the area of the city. This cessation of the growth of the population and of the city, and now "actual blight," as Dr. Russell phrases it, is symptomatic of a corresponding arrest and blight of trade.

A. B. C.—We should say not. The cases pass from his care as club patients on entering the hospital mentioned.

DAVOS PLATZ.

To the Editor of THE LANCET.

SIR,—May I, though a layman, be permitted to make some remarks on a paper on Davos, published in THE LANCET for Aug. 2nd. My experience of the last two years spent here has led me to form opinions at variance with Dr. Hassall's, which, he tells us, are based on the memory of a few days passed in the summer at Davos many years ago.

1. That Dr. Hassall's nervousness and dyspnœa at this altitude above the sea were rather idiosyncratic than due to the air, seems proved by the fact, patent to all observers, that convalescents gradually increase their morning walk from about one hundred to over one thousand feet uphill, and that they do not usually complain of bad sleep.

2. He says that meteorological observations have only been made over "short periods." The fact is this:—There is a station of the Swiss Meteorological Society at Davos, of which the observations for two full and continuous years have been published. Private observations made at the Hotel Belvedere over a much longer time are also accessible.

3. With regard to living and delicacies for invalids. The food at Davos is quite as good as that supplied in all the many continental health stations I have visited. There is a shop where Brand's preparations, &c., can be bought; and anything ordered from England comes quickly without trouble or delay at the frontier. In this respect Davos is more fortunate than Italy or the South of France. I know to my cost that a single tin of Brand's Essence of Beef is worth seven francs at Naples. A chief article of the phthisical patient's diet, milk, is here abundant and excellent.

4. It is quite contrary to fact that invalids live in a highly rarefied and heated air, without due ventilation during winter. Personally, while under treatment for phthisis in an advanced stage, I was recommended to be in the open air from sunrise to sunset, to walk for two hours in the open air before going to bed, and to sleep with open windows. This is the advice generally given, as I know well. I think, if anything, there is a disposition here to exaggerate the necessity of breathing pure air, and the invalid ought to exercise some private judgment in this matter. Still he can take more liberties with open air at Davos than elsewhere. During the winter 1877-8, though only just beginning to recover, I never passed the whole of one day in the house, and my bedroom thermometer registered an average of 45° Fah. at night without a fire.

5. With regard to the extreme rarefaction of the external air breathed in sunshine, and the consequently small amount of oxygen inhaled, it may be remarked that the reasoning upon this point is purely theoretical, while experience shows that invalids suffer no practical discomfort from this circumstance.

6. On details of treatment I have no right to speak. But I believe, on my own experience and that of other invalids, that some mistake has been made in imputing to the Davos physicians an excessive administration of stimulants. To drink the red wine of the Valtelline in fair quantities is always recommended; and I have heard of small doses of brandy being prescribed in cases of fever. But the tendency of the treatment here is to rely on nature and simple rules of exercise, to the exclusion of adventitious aids. Personally I have met with a great reluctance on the part of my physician to allowing me any indulgence in the way of tonic or sedative. Stimulants have never been mentioned to me.

I am not an exclusive believer in Davos, and perhaps I am more inclined to caution about it than when I wrote a year ago in the *Fortnightly*. What I have been able to observe of the progress made by consumptive patients induces me to think that, unless they can take daily exercise, they would be better off in a milder climate. Yet I have seen and known enough here to convince me that the climate is signally beneficial in many critical cases. The same can be said with equal justice no doubt about the Riviera, Madeira, Ventnor, the Nile, Australia, and Colorado. It is the duty of the climatologist to attempt a classification and co-ordination of what is known about these various health stations.

I am, Sir, yours obediently,

Davos Platz, Aug. 11th, 1879. JOHN ADDINGTON SYMONDS.

S. T. F.—The Instructions issued to Vaccinators; West's Diseases of Women and Children; Dr. Barnes's work on Obstetrics; Dr. Tilbury Fox's Treatise on Skin Diseases.

A Provincial Subscriber.—We are unable to comply with the request for obvious reasons.

SUDDEN DEATH OF A WOMAN AT BROWNEY-LANE, DURHAM.

IT is well in making a post-mortem to make it complete. Pneumonia is more fatal in women than in men, and is very fatal in pregnant women. Undoubtedly a few hours was a short time in which to get pneumonia and death from it. For all that, the letter of "Inter Nos" is not to be commended. It is easy to criticise medical evidence anonymously in public newspapers, but it is not edifying. If the whole facts are not explained by acute pneumonia, the cerebral view of the disease is still more untenable. The woman seemed perfectly clear as to her condition being a dying one.

Dr. E. T. Tibbits, (Bradford.)—The paper will be published in an early number.

Mr. Thomas Godfrey.—We are obliged for the suggestion.

LIME-JUICE AND LEMON-JUICE.

To the Editor of THE LANCET.

SIR,—We have read with interest your article upon "Scurvy in the Mercantile Marine," and are much surprised at the information which you state has reached you regarding the loose manner in which the sampling is performed.

We must emphatically say that, so far as this port is concerned, it is quite otherwise.

When we wish to bottle juice it is sent in and entered in the Government warehouses, and put under their lock and key. Each cask is well stirred up, and samples drawn from each by Government officials, and forwarded by them to Somerset House. If approved, it is mixed with spirits under their supervision, and bottled and sent out. It is utterly impossible for any tampering to take place. Were we to attempt such a thing, it would be at enormous risk to ourselves, with doubtful gain. It is obvious that for every gallon of juice we extracted from the cask we should have to replace it with a gallon of water, as we send in a cask containing a certain number of gallons, all of which we have to account for.

We have supplied lime- and lemon-juice to the mercantile marine for upwards of forty years, and during no period of time has better juice been supplied than in recent years. Mr. Bell and his staff at Somerset House are very particular in their requirements before passing the juice.

We believe the same regulations which exist here are in force at other ports, and what your informant alleges seems to us to be quite incredible.

We are, Sir, yours truly,

Leith, Aug. 20th, 1879. JOHN GILLON AND CO.

P.S.—It were surely a simple matter to ascertain and publish names of firms whose juice had on the voyage been found inferior. We should be much surprised to learn that juice bottled in Leith under the Duke of Richmond's Act had been found faulty. Can you find anything more suitable than juice from freshly-squeezed lemons, or with what reason can lime-juice after a long voyage be said to be better?

*** There is no need for surprise as to the matter, and Messrs. Gillon may be assured that we have very good grounds for the remarks made in our leading article. But it is certainly not our duty to publish the names of those who evade the law, and make a boast of it; and if "it be a simple matter" to ascertain and publish such names, no doubt the Board of Trade will do so. But the juice must, after the voyage, be examined before its inferiority can be proved, and we question if any right exists to examine more than once, unless scurvy has occurred on board.—ED. L.

GUACO IN EPITHELIOMA.

A CORRESPONDENT is anxious for information on this subject. The alleged remedy is said to be used by Dr. Schmidt, of Paris. Our correspondent appropriately signs himself "Sceptic."

THE MEDICAL REPORT TO THE POPLAR BOARD OF WORKS.

To the Editor of THE LANCET.

SIR,—In my report to the Poplar Board of Works (South District) an error has occurred while in the printer's hands. At page 21 the proportion of illegitimate births to total births should have been 3·65 instead of 39·24. The latter number refers to the next paragraph, as seen by reference to table ii., page 36, of the report which has been forwarded to you.

I am, Sir, yours truly,

F. M. CORNER,

Medical Officer of Health, Poplar District.

Manor House, Poplar, Aug. 27th, 1879.

HYPODERMIC INJECTIONS.

To the Editor of THE LANCET.

SIR,—In reply to the query of "T. J. W.," I may state that I have seen two cases of distant subcutaneous abscess following the hypodermic injection of ergotine, and one case of inflammation of the lymphatics and enlargement of the glands of the arm, following the injection of morphia. In the latter case, which caused me some anxiety at the time, as it was a case of compound fracture of the skull, with hernia cerebri, there could be no suspicion of any septic matter having been conveyed by the point of the needle, as the syringe was a new one. The inflammation, however, ended in resolution, and the case did well.

Yours truly,

S. J. RENNIE.

The District Infirmary, Ashton-under-Lyne, Aug. 23rd, 1879.

S. T.—The subject of surface thermometry is in its infancy, but promises to be of considerable importance to diagnosis in the future. See an annotation on the subject in our present issue, and notices in THE LANCET of August 11th and 25th, and September 1st, 1877.

"AERATED DRINKS AND THEIR EFFECTS."

To the Editor of THE LANCET.

SIR,—In your journal of August 9th, 1879, a letter appeared, signed "Pro Bono Publico," complaining of an extraordinary change in the colour of some brandy put into a lemonade-bottle, which was "patent stoppered," and asking your readers for their opinions. It struck me that there must be some mistake; but as the matter was an important one, and as almost everyone now uses a "patent stopper" of some kind, I have tried some experiments with the various stoppers in general use, especially the two best and most commonly seen, those of "Codd" and "Barrett and Co.'s." I have, however, utterly failed to produce any such "turbid mixture," as your correspondent says he did. I can find *no trace* of acetate of lead in eleven samples I have purchased of various manufacturers using these "patents," and I am also assured by vulcanised india-rubber makers that free acetate of lead, or lead converted into acetate, cannot be obtained from the rubber used for these patents. One principal house states that no preparation of lead is used in their manufacture, and their chemist disbelieves the deduction drawn by your correspondent, and thinks the bottle had been used for other purposes. The letter in question has been greedily seized on by "cork manufacturers" to abuse "patent stoppers"; but some further proof is required to strengthen your correspondent's case. If vulcanised rubber is deleterious, how is it that no ill-effects follow from the thousands of feeding-tubes, nipple-shields, and other articles in hourly use? It is an important subject, and one which can be set at rest by a strict series of tests. It will be at once apparent that the sort of patent, the machinery used in the manufacture, the aerated water itself, the uses to which the bottle had been put, the brandy purchased, and other factors required to be considered before a conclusion was arrived at, which appears to be too hasty and inconsequent. Your obedient servant,

August, 1879. W.

*** We agree with our correspondent that much more precise evidence is required before a case is made out against the manufacturers of vulcanised india-rubber bands, and the fact established that these bands ordinarily contain lead in any form. We, too, have made several analyses of them, and in no case have we found even a trace of lead to be present. The turbidity noticed by "Pro Bono Publico," on adding water, first to the brandy which had been placed in the lemonade-bottle, and afterwards to the spirits of wine, admits of a very simple explanation, which we believe to be the correct one. If the water were hard, as it nearly always is, part of the lime would be immediately thrown down in consequence of its insolubility in the spirit, and the turbidity noticed would thus be occasioned. There is evidently a battle being waged between corks and patent stoppers: the makers of the former affirming that the stoppers are poisonous; and the manufacturers of the latter that the corks are often dirty, and more or less saturated with the liquids contained in the bottles for which they were first used. It appears to us that the cork manufacturers are making a somewhat unfair use of "Pro Bono Publico's" letter.—ED. L.

THE ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—It is to be hoped, now that new regulations are shortly to be issued in connexion with the above service, that the authorities will see the advisability of keeping the age of intending candidates open up to thirty-two, and not limiting it to twenty-eight. There can be no doubt but that they would get a far better set of men (I mean as far as qualifications go) were they to do so. Another point in the old regulations which has surprised many is why married men should be debarred from entering the service. I think it would rather puzzle those who framed the regulations to give any sensible reason for it. Surely a married man can serve his Queen and country as well as an unmarried one. Having been brought up in the army, I can conscientiously affirm that married surgeons are quite as well, if not better, calculated to do their duty than those who are not married. I feel certain that these two points had a great deal to do with rendering the medical branch of the army as unpopular as it is at present.—I am, Sir, yours truly,

Aug. 23rd, 1879. W. A. d'A. NORRIS.

THE CASE OF THOMAS MILLERCHIP.

To the Editor of THE LANCET.

SIR,—Please to acknowledge receipt of the undermentioned sums:—

Dr. Miller, Rye, Ipswich	£1 1 0
Dr. Smith, Pershore	1 1 0
Mr. Buckle, Winchester	0 10 0
Mr. Bentham, Southsea	0 5 0

The total sum forwarded to me amounts to £65 7*s.* I have promises standing out, and I shall be obliged by your permitting me to state to intending subscribers that I am anxious to bring the matter to a close. £60 has now been sent to the Rev. F. M. Beaumont, Vicar, Holy Trinity, Coventry, to be expended as I have directed for Mr. Millerchip's benefit.

I am, Sir, yours obediently,

33, Dean-street, Soho, Aug. 26th, 1879. JOSEPH ROGERS.

Welshman.—The title in question would in England attach to the degree mentioned, but not to the other qualifications. It is actually forbidden by the bye-laws of the College of Physicians, London.

Weekly Reader, M.D., asks to be referred to some trustworthy author who treats of the medical and surgical diseases that are recorded in the Scriptures.

THE STOCKER TESTIMONIAL.

To the Editor of THE LANCET.

SIR,—We trust that you will allow us to make public through your columns the following statement concerning the testimonial raised in memory of the late Mr. James Stocker, who for many years acted as resident medical officer and apothecary at Guy's Hospital.

The subscriptions amounted in all to £406 14*s.* 6*d.*; the cost of printing and posting circulars, £17 18*s.* 7½*d.*, leaving a balance of £388 15*s.* 10½*d.* Of this a cheque for £50 was forwarded on June 5th for Mrs. Stocker's immediate use. The remainder, at the desire of many of the subscribers, will be placed in the hands of Mr. Stocker's executors, to be invested for Mrs. Stocker's use during her lifetime, and afterwards to be divided equally for the benefit of the Misses Stocker and Mr. Henry Stocker, who is an invalid. A complete list of subscribers will appear in the September number of *Guy's Hospital Gazette*.

We are, Sir, faithfully yours,

R. CLEMENT LUCAS, } Hon. Secs.
August 26th, 1879. H. E. WADDY, }

TINCTURE OF HAMAMELIS.

To the Editor of THE LANCET.

SIR,—In reply to "M.D.," though I cannot actually inform him where he can obtain the above-named tincture, I believe I can give him as much information about it as will serve his purpose. It is an American remedy, made from the Hamamelis virginica, or winter hazel, or winter bloom, sometimes called snapping hazel. The bark of the tree is bitter and astringent. It was recommended to me some twenty-five years ago as an astringent, especially in ophthalmic cases, but I soon got tired of it, and thought it vastly overrated, and nothing like so powerful, or so valuable and reliable as tannic acid, oak bark, Matico, rhatany root, granite bark, and several other serviceable vegetable astringents. Its astringent property is evidently due to the tannic acid it contains. Why, then, does not "M.D." use the tannic acid itself? The dose he mentions is palpably absurd and innocuous, and I should surmise is the prescription of a homœopath. Of the preparation sent to me,—and I do not believe it possible to make a stronger tincture of the bark—I should have had no hesitation myself to swallow at least a drachm of it. One minim doses of such remedies are inert. For severe cases of pulmonary hæmorrhage I have found nothing so efficacious as full doses of chlorodyne. It is far superior to tannin, acetate of lead, alum, tincture of sesquichloride of iron, and several other so-called "styptics" which are or have been much in vogue for this distressing malady.

I am, Sir, faithfully yours,

Croydon, Aug. 3rd. J. H. SHORTHOUSE, M.D.

To the Editor of THE LANCET.

SIR,—I think your correspondent "M.D." will be able to procure the tincture of hamamelis at any first-rate druggist's. Pond's Extract (fluid) of hamamelis is also a good preparation. I have used it for some time (ten to fifteen minims) with marked benefit in cases of passive uterine hæmorrhage. Yours faithfully,

August 23rd, 1879. HEYWOOD SMITH.

To the Editor of THE LANCET.

SIR,—In reply to "M.D.'s" letter, in last week's issue, I believe tincture of hamamelis can be obtained of almost any wholesale druggist, even though the article does not appear in their price lists. Richardson and Co., Leicester, quote it at 3*s.* 4*d.* per lb., and of their preparation I give ten minims three or four times daily, but from the dose ordered by "A London doctor"—namely, one minim every hour—I should think that some stronger preparation is intended, perhaps that prepared according to the Homœopathic Pharmacopœia, by Leith and Ross, of Vere-street.

Hamamelis virginica is one of the most valuable of hæmostatics. I always use it freely in menorrhagia and hæmoptysis, with uniformly good results.

The well-known patent medicine, Pond's Extract, owes its properties to witch hazel. Yours truly,

Clapton-square, Aug. 24th, 1879. ROLAND SMITH, M.R.C.S.

To the Editor of THE LANCET.

SIR,—The tincture of hamamelis virginica, or witch hazel, can be procured from Mr. Martindale, New Cavendish-street, W. Dr. Ringer recommends its use in epistaxis, hæmoptysis, hæmatemesis, dysentery, hæmaturia, bleeding piles, and passive hæmorrhage generally. I have myself used it in a few cases with good results. A larger dose than two or three minims may produce headache. Yours truly,

THEODORE MAXWELL, M.D. Camb., B.Sc. Lond.,
Compiler of the Analytical Index to Dr. Ringer's Therapeutics.
Woolwich Common, Aug. 22nd, 1879.

To the Editor of THE LANCET.

SIR,—In reply to the inquiry of "M.D.," I have the pleasure to inform him that I have prescribed the tincture of hamamelis, or hammamelis (witch hazel), occasionally in cases of hæmorrhage, but with no great success. I have known throbbing headache caused by a too long continued use of the drug. Yours faithfully,

Ilfracombe, Aug. 26th, 1879. EDWYN SLADE-KING, M.D.

*** We have received many letters to the same effect.—ED. L.